

# Distributed I/O

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In addition to our controllers, Mitsubishi Electric can offer you the capability to add a broad range of I/O to allow you to place I/O points close to where they are required on your machine or line. We offer three main approaches to putting I/O on a network:

## **Control Level:**

### **MELSECNET/H, NET/10, NET/II, NET/B**

These Mitsubishi Electric control level networks allow controller to controller networking, plus the ability to place regular rack based I/O on a network link that operates up to 25Mbit/s. A network node of remote I/O uses a standard controller base with a remote I/O network adapter in place of a CPU. As a standard base unit is used, any type of regular rack based I/O or special function module may be used. This gives tremendous flexibility for configuring remote I/O nodes. For more details on modules available, please refer to the relevant Q, QnA, AnS or A Series controller sections. Note that in general, a remote I/O network is a separate network segment to a controller network.

## **Device Level:**

### **CC-Link**

CC-Link is a high performance, open device level network that operates up to 10Mbit/s. Mitsubishi Electric offers extensive support for this network, with a wide variety of I/O and special function modules that sit directly on the network, under the control of a Q, QnA, AnS/QnAS, A or FX2N Supermicro Series controller. This section presents the I/O and special function modules available, divided into device types. For information on other Mitsubishi Electric automation products that support CC-Link, please refer to the other controller, HMI, VFD and Servo sections of this publication.

### **Profibus-DP**

Profibus-DP is an alternative open device level network also widely supported by Mitsubishi Electric. This section presents the I/O choices available. For information on other Mitsubishi Electric automation products that support Profibus, please refer to the other controller, HMI & VFD sections of this publication.

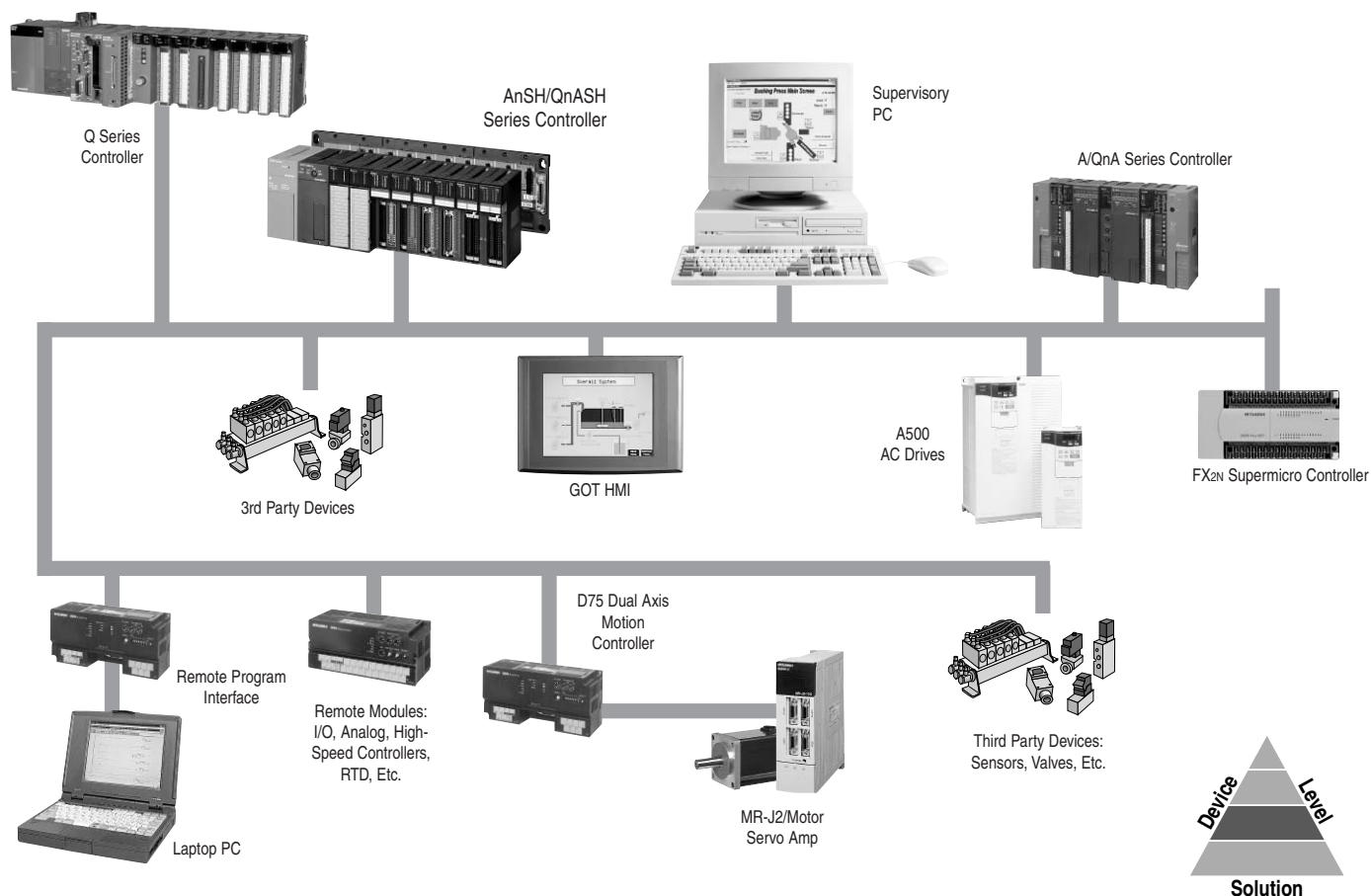
## **Sensor Level:**

### **CC-Link/LT**

CC-Link/LT is a sensor level version of CC-Link. It offers a way to simply connect discrete I/O to a controller with a minimum of installation and labor costs. CC-Link/LT uses a special "vampire" style connection technology to make device connections with no cutting or stripping of cable.

### **I/O Link**

I/O link is a standalone Mitsubishi Electric network that handles small quantities of digital I/O on a twisted pair connection. I/O Link is easy to program and install and is supported by most of our controllers.



## CC-Link

Control and Communication Link (CC-Link) is an open network administered as a fully open architecture by the CC-Link Partner Association (CLPA). Currently over 300 vendors are manufacturing products for it.

CC-Link was designed from the outset as a "flat" network. This means it offers both high speed response of I/O performance, but also high volumes of data communication as required in more complex distributed systems. CC-Link guarantees a full 10Mbit/s performance across the whole network, regardless of device type, eliminating hidden bottle necks, common with other open systems. While configuration software is not mandatory, CC-Link Configurator offers an intuitive, graphical network configuration tool for setting up and troubleshooting a system. Our standard GX Developer development suite also includes built-in configuration tools for CC-Link.

CC-Link offers you the widest choices for integrating a wide variety of automation components into a single, seamless automation system. We can offer a system that can include any of the following items on the network:

- ☐ Master or local controllers (Q, QnA, QnASH, AnSH, A, FX)
- ☐ GOT HMI
- ☐ E and A500 VFD
- ☐ Discrete I/O (in a wide variety of types and configurations)
- ☐ Analog I/O
- ☐ High speed counters
- ☐ Motion control
- ☐ RTD/Thermocouple modules
- ☐ PC stations via PC-link cards

## Guide to CC-Link I/O and Special Function Modules

This section presents the current line-up of CC-Link I/O blocks and special function modules. For network master modules, please refer to the appropriate controller section. Before using this guide, please read the following guide to nomenclature:

### Guide to CC-Link I/O Nomenclature Generic part number format

Generic Part Number Format:								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<p><b>(1) Generic product family:</b> "AJ65" is the generic designation for CC-Link. Note: This applies to all CC-Link devices except for master modules, which are designated "A1S/J61" or "QJ61" (e.g. AJ61BT11, A1S/J61BT11, QJ61BT11, etc.)</p>								
<p><b>(2) Module type:</b> "F": Waterproof (IP67), low profile type (e.g. AJ65FBA4-16DE) "S": Compact type (e.g. AJ65SBTB1-SD) "V": Vertical format (e.g. AJ65VBTQ2-16T)</p>								
<p><b>(3) Cable specification:</b> "B": Twisted pair cable. Currently all blocks have this designation. Note: Use CLPA certified network cable to insure correct network operation BA1SJ61-S: signal only cable BA1SJ61-P: signal and power cable</p>								
<p><b>(4) Connector type:</b> "A": M12 waterproof (IP67) threaded connector (e.g. AJ65FBA4-16DE) "B": Screw terminal block (e.g. AJ65SBTB1-SD) "C": One touch connector for I/O connections (e.g. AJ65SBTC1-32T) "FCN": FCN connector (e.g. AJ65SBTC1-32T) "CUP": One touch connector for I/O, power and network connections (e.g. AJ65VBTQ2-16T)</p>								
<p><b>(5) External load connection method:</b> "1": 1 wire type (e.g. AJ65SBTB1-16T) "2": 2 wire type (e.g. AJ65SBTB2-16T) "3": 3 wire type (e.g. AJ65VBTQ3-80T) "4": 4 wire type (e.g. AJ65FBA4-16DE) "32": 3 wire type on inputs, 2 wire type on outputs (e.g. AJ65SBTB32-80DT) "42": 4 wire type on inputs, 2 wire type on outputs (e.g. AJ65FBA42-16DT)</p>								

**One Touch Connector (OTC):** OTC offer significant installation and maintenance benefits as follows:

- IDC (insulation displacement connector) type connection avoids need for stripping or terminating wiring with lugs. Simply cut wiring to length, insert into connector and snap shut to make a reliable connection. These are available for I/O, network & power connections.
- Easily connected and disconnected individually or in groups to assist maintenance
- Compact design minimizes I/O block size
- Available in a variety of wiring gauge sizes and colors for identification
- Shipped in boxes of 20 connectors; divide quantity required by 20, then round up to next whole number for correct order quantity.

Model Number	Gauge Size (AWG)	Color	Qty. Per Box	Comments
A6CON-P214	26-24	Transparent	20	For I/O
A6CON-P220	26-24	Yellow	20	For I/O
A6CON-P514	22-20	Red	20	For I/O
A6CON-P520	22-20	Blue	20	For I/O

- **Waterproof M12 connectors:** Selected I/O blocks are available in an IP67 waterproof format. These use connectors that use a M12 metric threaded connector to make all connections. Benefits include:
  - Water tight connections for installations where exposure to liquids is required
  - In some installations, these blocks may be mounted directly on a machine without the need for an enclosure, reducing system cost.
- **Miscellaneous accessories:** The following accessories are also available: Note the quantity per box and calculate the correct order quantity accordingly.

Model Number	Quantity Per Box	Comments
BA1SJ61-S	N/A	Three conductor, CLPA certified, signal only CC-Link cable. Sold by the meter.
BA1SJ61-P	N/A	Five conductor, CLPA certified, signal and power CC-Link cable. Sold by the meter.
A6CON-L5P	10	OTC network connector
A6CON-PW5P	10	OTC network connector
A6CON-LJ5P	5	OTC Network on-line connector (1)
A6CON-PWJ5P	5	OTC Power on-line connector (2)
A6CON-TR11	1	Terminating resistor (3)
A6CAP-DC1	20	Dust cap to protect unused connectors on IP67 modules (4)
A6CAP-WP1	20	Metal waterproof cap to protect unused connectors on IP67 modules (4)
A6CAP-WP2	20	Plastic waterproof cap to protect unused connectors on IP67 modules (4)
A6PLT-J65V1	1	DIN rail mount for vertical format blocks (single width)
A6PLT-J65V2	1	DIN rail mount for vertical format blocks (double width)
BKO-C8834H12	2 x 110 ohm, 2 x 130 ohm	CC-Link terminating resistors with insulating lugs
BKO-C10798H02	1	QJ61BT11 network terminal block assembly

**Notes:**

1. This connector accepts two A6CON-L5P and plugs into a CC-Link module. Its function is to allow a network connection to be connected/disconnected via a single operation, and maintains the network connection. Note these are only used with "VBT" type modules.
2. Accepts two A6CON-PW5P and performs the same function as A6CON-LJ5P for power. Use only with "VBT" modules.
3. Required at the end of a network segment for reliable communication for "VBT" modules.
4. AJ65FBT & AJ65SBTW4 type modules

## Required Manuals

Model Number	Description	Contents	Included?
SH(NA)4007	CC-Link System Compact Type Remote I/O Module	Covers all CC-Link digital I/O blocks	No (purchase separately)
SH(NA)3614	AJ65BT-64AD Analog Digital Converter Module User's Manual	Covers AJ65BT-64AD	No (purchase separately)
IB(NA)66748	AJ65BT-64AD Analog Digital Converter Module User's Manual (Hardware)	Covers basic features of the AJ65BT-64AD	Yes
SH(NA)3615	AJ65BT-64DAV/DAI Digital Analog Conversion Module User's Manual	Covers AJ65BT-64DAV & 64DAI	No (purchase separately)
SH(NA)080107	AJ65SBT-62DA Digital-Analog Converter Module User's Manual	Covers AJ65SBT-62DA	No (purchase separately)
IB(NA)0800139	AJ65SBT-62DA Digital-Analog Converter Module User's Manual (Hardware)	Covers basic features of the AJ65BT-62DA	Yes
SH(NA)080106	AJ65SBT-64AD Analog-Digital Converter Module User's Manual	Covers AJ65SBT-64AD	No (purchase separately)
IB(NA)0800138	AJ65SBT-64AD Analog-Digital Converter Module User's Manual (Hardware)	Covers basic features of the AJ65SBT-64AD	Yes
SH(NA)080181	AJ65VBTCU-68ADV/ADI Analog-Digital Converter Module User's Manual	Covers AJ65VBTCU-68ADV & 68ADI	No (purchase separately)
IB(NA)0800200	AJ65VBTCU-68ADV/ADI Analog-Digital Converter Module User's Manual (Hardware)	Covers basic features of the AJ65VBTCU-68ADV & 68ADI	Yes
SH(NA)080182	AJ65VBTCU-68DAV Digital-Analog Converter Module User's Manual	Covers AJ65VBTCU-68DAV	No (purchase separately)
IB(NA)0800201	AJ65VBTCU-68DAV Digital-Analog Converter Module User's Manual (Hardware)	Covers basic features of the AJ65VBTCU-68DAV	Yes
SH(NA)4001	AJ65BT-64RD3/-64RD4 Pt100 Temperature Input Module User's Manual	Covers AJ65BT-64RD3/-64RD4	No (purchase separately)
IB(NA)66831	AJ65BT-64RD3/-64RD4 Pt100 Temperature Input Module User's Manual (Hardware)	Covers basic features of the AJ65BT-64RD3 & 64RD4	Yes
IB(NA)66830	AJ65BT-68TD Thermocouple Input Module User's Manual (Hardware)	Covers AJ65BT-68TD	Yes
IB(NA)66823	AJ65BT-D62/D62D/D62D-S1 High Speed Counter Module User's Manual	Covers all CC-Link high speed counter modules	No (purchase separately)
IB(NA)66822	AJ65BT-D62/D62D/D62D-S1 High Speed Counter Module User's Manual (Hardware)	Covers basic features of high speed counter modules	Yes
IB(NA)66824	AJ65BT-D75P2-S3 Positioning Module User's Manual	Covers AJ65BT-D75P2-S3	No (purchase separately)
IB(NA)66829	AJ65BT-D75P2-S3 Positioning Module User's Manual (Hardware)	Covers basic features of the AJ65BT-D75P2-S3	Yes
IB(NA)66781	AJ65BT-R2 RS232 Interface Module User's Manual	Covers AJ65BT-R2	No (purchase separately)
IB(NA)66780	AJ65BT-R2 RS232 Interface Module User's Manual (Hardware)	Covers basic features of the AJ65BT-R2	Yes
SH(NA)080105	AJ65BT-G4-S3 Peripheral Connection Module User's Manual	Covers AJ65BT-G4-S3	No (purchase separately)
IB(NA)0800137	AJ65BT-G4-S3 Peripheral Connection Module User's Manual (Hardware)	Covers basic features of the AJ65BT-G4-S3	Yes
IB(NA)0800251	Analog-Digital Converter Module User's Manual (Hardware) AJ65VBTCU-68ADV/ADIN	Covers basic features of the AJ65VBTCU-68ADV/ADIN	Yes
SH(NA)080401	Analog-Digital Converter Module Type AJ65VBTCU-68ADV/ADIN User's Manual	Covers AJ65VBTCU-68ADV and AJ65VBTCU-68ADIN	No (purchase separately)
IB(NA)8000252	Digital-Analog Converter Module User's Manual (Hardware) AJ65VBTCU-68DAVN	Covers basic features of the AJ65VBTCU-68DAVN	Yes
SH(NA)080402	Digital-Analog Converter Module Type AJ65VBTCU-68DAVN User's Manual	Covers AJ65VBTCU-68DAVN	No (purchase separately)
IB(NA)0800240	AJ65SBT-CLB CC-Link-CC-Link/LT Bridge Module User's Manual (Hardware)	Contains basic information on the bridge module	Yes
SH(NA)080362	AJ65SBT-CLB CC-Link-CC-Link/LT Bridge Module User's Manual	Covers the bridge module	No (purchase separately)

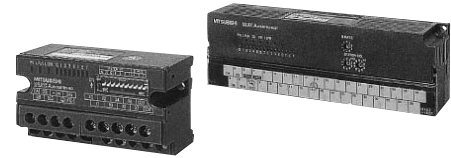
Note: Many of these manuals are available by free download from our website, [www.meau.com](http://www.meau.com)



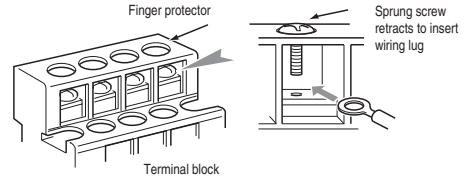
# CC-Link Remote I/O: AJ65SBTB□-□• AJ65BTB□-□ Screw Terminal Block Type

## AJ65SBTB□-□/AJ65BTB□-□

- Widest range of I/O types in CC-Link I/O product line.
- AJ65BTB□-□ types equipped with removable terminal blocks.
- AJ65SBTB□-□ offer most efficient use of panel space.
- All models UL • cUL listed and CE certified.



• Screw Terminals



## Performance Specifications

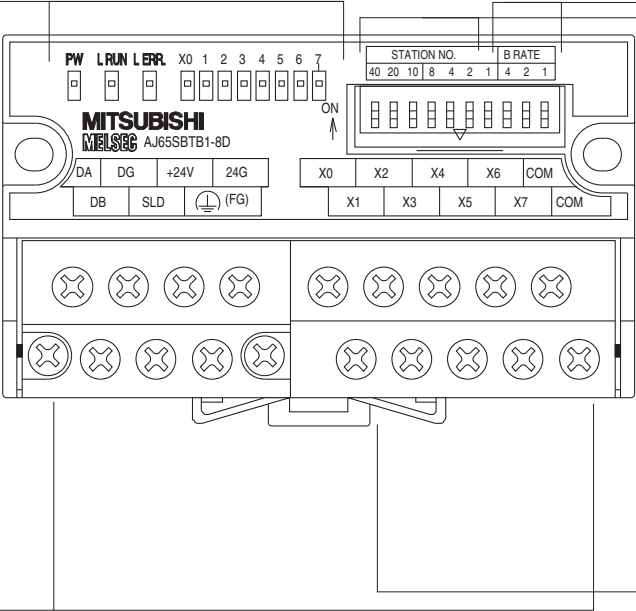
Input Module Model Name	Input Type		Number of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Internal Current Consumption					
						ON Voltage	OFF Voltage	OFF—ON	ON—OFF								
AJ65SBTB1-8D	DC input	+COM—COM common type	8 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	One wire type	8 points 1 common	30mA					
AJ65SBTB1-16D	DC input	+COM—COM common type	16 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	One wire type	16 points 1 common	35mA					
AJ65SBTB1-16D1	DC input	+COM—COM common type	16 points	Photocoupler	24 VDC	15 V min.	3 V max.	0.2 ms max.	0.2 ms max.	One wire type	16 points 1 common	40mA					
AJ65SBTB1-32D	DC input	+COM—COM common type	32 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	One wire type	32 points 1 common	45mA					
AJ65SBTB1-32D1	DC input	+COM—COM common type	32 points	Photocoupler	24 VDC	15 V min.	3 V max.	0.2 ms max.	0.2 ms max.	One wire type	32 points 1 common	50mA					
AJ65SBTB2N-8A	AC input	—	8 points	Photocoupler	100 to 120 VAC	80 V min.	30 V max.	20 ms max.	20 ms max.	Two wire type	8 points 1 common	35mA					
AJ65SBTB2N-16A	AC input	—	16 points	Photocoupler	100 to 120 VAC	80 V min.	30 V max.	20 ms max.	20 ms max.	Two wire type	16 points 1 common	40mA					
AJ65SBTB3-8D	DC input	+COM—COM common type	8 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	Three wire type	8 points 1 common	40mA					
AJ65SBTB3-16D	DC input	+COM—COM common type	16 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	Three wire type	16 points 1 common	45mA					
AJ65BTB1-16D	DC input	+COM—COM common type	16 points	Photocoupler	24 VDC	14 V min.	6 V max.	10 ms max.	10 ms max.	One wire type	16 points 1 common	60mA					
AJ65BTB2-16D	DC input	+COM—COM common type	16 points	Photocoupler	24 VDC	14 V min.	6 V max.	10 ms max.	10 ms max.	Two wire type	16 points 1 common	60mA					
Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption			
1 Point						1 Common	OFF—ON	ON—OFF									
AJ65SBTB1-8T	Transistor output	Sink type	8 points	Photocoupler	12/24 VDC	0.5A	2.4A	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type	8 pts 1 com	35mA			
AJ65SBTB1-8T1	Transistor output	Sink type	8 points	Photocoupler	12/24 VDC	0.5A	2.4A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type	8 pts 1 com	35mA			
AJ65SBTB1-16T	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.5A	3.6A	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type	16 pts 1 com	50mA			
AJ65SBTB1-32T	Transistor output	Sink type	32 points	Photocoupler	12/24 VDC	0.5A	4.8A	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type	32 pts 1 com	65mA			
AJ65SBTB1-16T1	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.5A	3.6A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type	16 pts 1 com	50mA			
AJ65SBTB1-32T1	Transistor output	Sink type	32 points	Photocoupler	12/24 VDC	0.5A	4.8A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type	32 pts 1 com	65mA			
AJ65SBTB1-8TE	Transistor output	Source type	8 points	Photocoupler	12/24 VDC	0.1A	0.8A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type	8 pts 1 com	35mA			
AJ65SBTB1-16TE	Transistor output	Source type	16 points	Photocoupler	12/24 VDC	0.1A	1.6A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type	16 pts 1 com	50mA			
AJ65SBTB2-8T	Transistor output	Sink type	8 points	Photocoupler	12/24 VDC	0.5A	2.4A	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	Two wire type	8 pts 1 com	45mA			
AJ65SBTB2-16T	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.5A	3.6A	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	Two wire type	16 pts 1 com	55mA			
AJ65SBTB2-8T1	Transistor output	Sink type	8 points	Photocoupler	12/24 VDC	0.5A	2.4A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	Two wire type	8 pts 1 com	45mA			
AJ65SBTB2-16T1	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.5A	3.6A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	Two wire type	16 pts 1 com	55mA			
AJ65SBTB2N-8R	Relay output	—	8 points	Relay	24 VDC/240 VAC	2A	4A	10 ms max.	12 ms max.	—	None	Two wire type	8 pts 1 com	85mA			
AJ65SBTB2N-16R	Relay output	—	16 points	Relay	24 VDC/240 VAC	2A	8A	10 ms max.	12 ms max.	—	None	Two wire type	16 pts 1 com	120mA			
AJ65SBTB2N-8S	Triac output	—	8 points	Photocoupler	100 to 240 VAC	0.6A	2.4A	1 ms max.	1/2c + 1 ms max.	—	C-R absorber	Two wire type	8 pts 1 com	55mA			
AJ65SBTB2N-16S	Triac output	—	16 points	Photocoupler	100 to 240 VAC	0.6A	4.8A	1 ms max.	1/2c + 1 ms max.	—	C-R absorber	Two wire type	16 pts 1 com	85mA			
AJ65BTB1-16T	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.5A	4A	2 ms max.	2 ms max.	0.1 mA max.	Zener diode	One wire type	8 pts 1 com	80mA			
AJ65BTB2-16R	Relay output	—	16 points	Relay	24 VDC/240 VAC	2A	8A	10 ms max.	12 ms max.	—	None	Two wire type	8 points 1 com	85mA			
AJ65BTB2-16T	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.5A	4A	2 ms max.	2 ms max.	0.1 mA max.	Zener diode	Two wire type	8 pts 1 com	80mA			
Combined I/O Module Model Name	I/O Type		Number of I/O Points	Isolation Method	Input/Load Voltage	Input Response Time	Maximum Load Current		Operating Voltage		Output Response Time		Leakage Current	Surge Suppression	Connection Wire Type on Input/Output Sides	Common Connection	Internal Current Consumption
1 Point							1 Common	ON Voltage	OFF Voltage	OFF—ON	ON—OFF						
AJ65SBTB1-16DT	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	2.4A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type / One wire type	16 pts 1 com	50mA
AJ65SBTB1-16DT1	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/24VDC	0.2 ms max.	0.5A	2.4A	15 V min.	3 V max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type / One wire type	16 pts 1 com	55mA
AJ65SBTB1-16DT2	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	2.4A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	16 pts 1 com	50mA
AJ65SBTB1-16DT3	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/24VDC	0.2 ms max.	0.5A	2.4A	15 V min.	3 V max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	16 pts 1 com	55mA
AJ65SBTB1-32DT	DC input /trans output	+COM type/sink type	16 pts /16 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	3.6A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type / One wire type	32 pts 1 com	60mA
AJ65SBTB1-32DT1	DC input /trans output	+COM type/sink type	16 pts /16 pts	Photocoupler / photocoupler	24VDC/24VDC	0.2 ms max.	0.5A	3.6A	15 V min.	3 V max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type / One wire type	32 pts 1 com	60mA
AJ65SBTB1-32DT2	DC input /trans output	+COM type/sink type	16 pts /16 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	3.6A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	32 pts 1 com	60mA
AJ65SBTB1-32DT3	DC input /trans output	+COM type/sink type	16 pts /16 pts	Photocoupler / photocoupler	24VDC/24VDC	0.2 ms max.	0.5A	3.6A	15 V min.	3 V max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	32 pts 1 com	60mA
AJ65SBTB3-8DT	DC input /trans output	+COM type/sink type	4 pts /4 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	1.2A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	Three wire type / Two wire type	8 pts 1 com	45mA
AJ65SBTB3-8DT2	DC input /trans output	+COM type/sink type	4 pts /4 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	1.2A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	Three wire type / Two wire type	8 pts 1 com	45mA
AJ65SBTB3-16DT	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	2.4A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	Three wire type / Two wire type	16 pts 1 com	50mA
AJ65SBTB3-16DT2	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/24VDC	1.5 ms max.	0.5A	2.4A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	Three wire type / Two wire type	16 pts 1 com	50mA
AJ65BTB1-16DT	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/12/24VDC	10 ms max.	0.5A	4A	14 V min.	6 V max.	2 ms max.	2 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	8 pts 1 com	70mA
AJ65BTB2-16DT	DC input /trans output	+COM type/sink type	8 pts /8 pts	Photocoupler / photocoupler	24VDC/12/24VDC	10 ms max.	0.5A	4A	14 V min.	6 V max.	2 ms max.	2 ms max.	0.1 mA max.	Zener diode	Two wire type/ Two wire type	8 pts 1 com	70mA
AJ65BTB2-16DR	DC input /relay output	+COM—COM common type/—	8 pts /8 pts	Photocoupler / relay	24VDC/240VAC	10 ms max.	2A	8A	14 V min.	6 V max.	10 ms max.	12 ms max.	—	None	Two wire type/ Two wire type	8 pts 1 com	70mA

+COM: Positive common (sink) -COM: Negative common (source)

Guide to Module Features

LED display

LED Name	Item Checked
PW	Turns on when the power supply to the remote I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. (It turns off when the settings are modified and the power supply is turned off then on again.) It flashes if the station-number and transmission-speed settings are changed while the communication is active. (L RUN also turns on. The module operates under the conditions given via the station-number and transmission-speed settings at the time the power supply was turned on.)
X0 to 1F	Displays the on/off status of input. The LEDs turn on in the "On" state, and off in the "Off" state.



Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

Station number setting switches

"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.  
 "1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

Terminal block

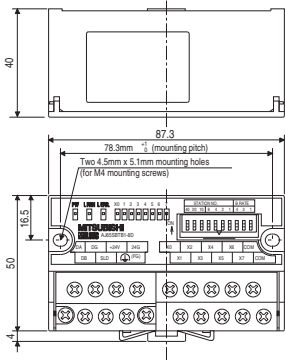
DIN rail hook

Hook for mounting the module to the DIN rail

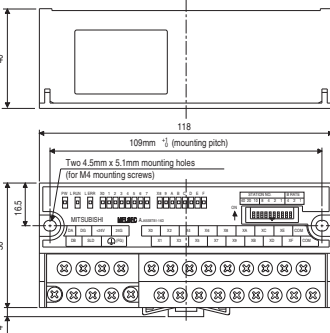
External Dimensions

Unit: mm

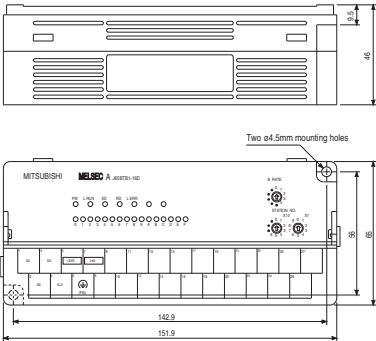
AJ65SBTB1-8□



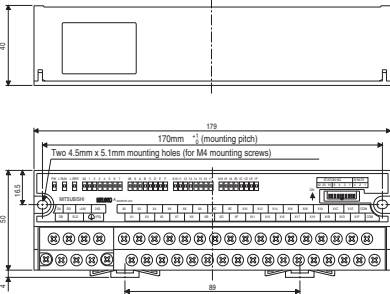
AJ65SBTB1-16□  
 AJ65SBTB3-8□



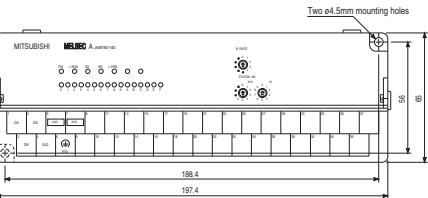
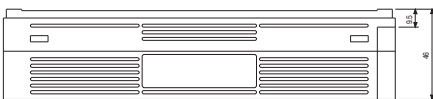
AJ65SBTB1-16□



AJ65SBTB1-32□  
 AJ65SBTB3-16□



AJ65BTB2-16□

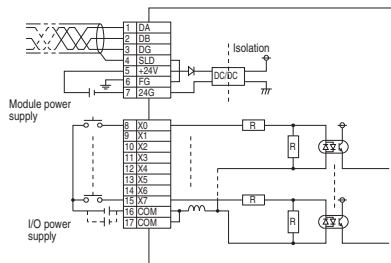




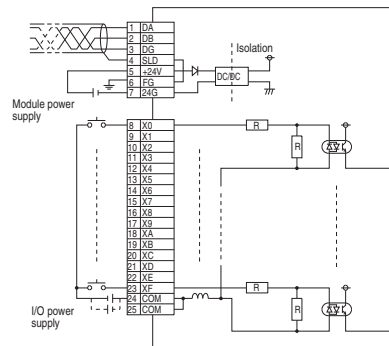
# External Connections

## Input Modules

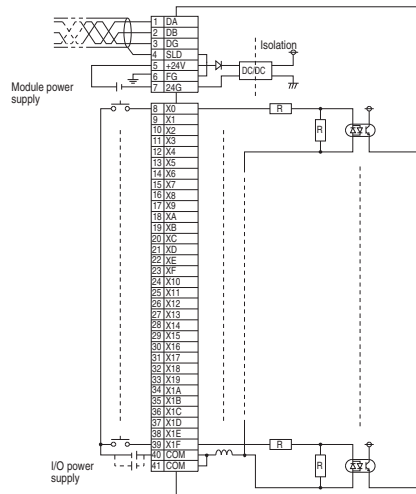
AJ65SBTB1-8D type



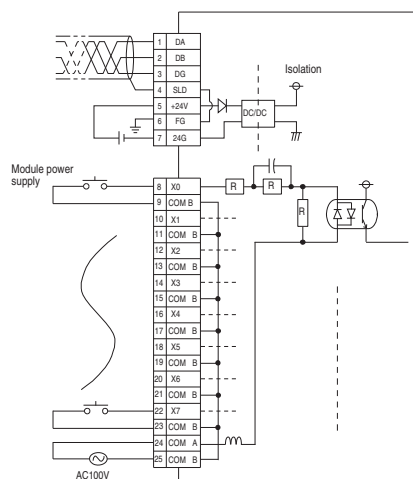
AJ65SBTB1-16D type, AJ65SBTB1-16D1 type



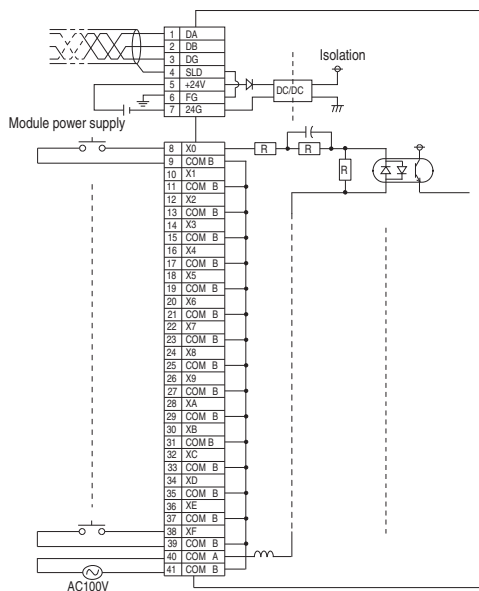
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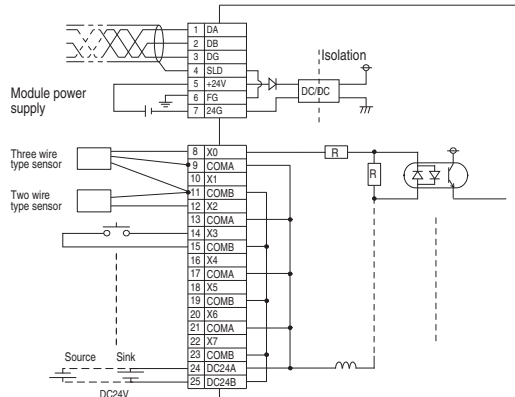
AJ65SBTB2N-8A type



AJ65SBTB2N-16A type

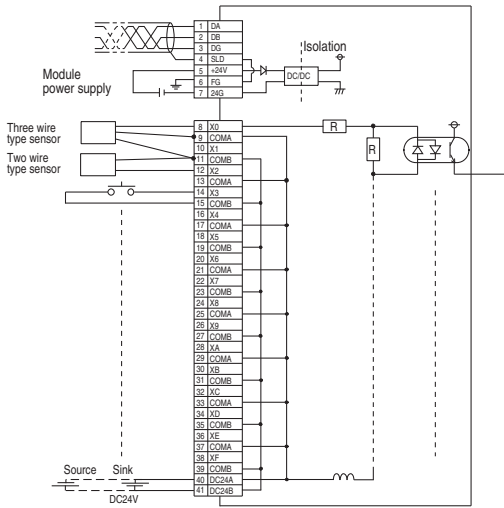


AJ65SBTB3-8D type

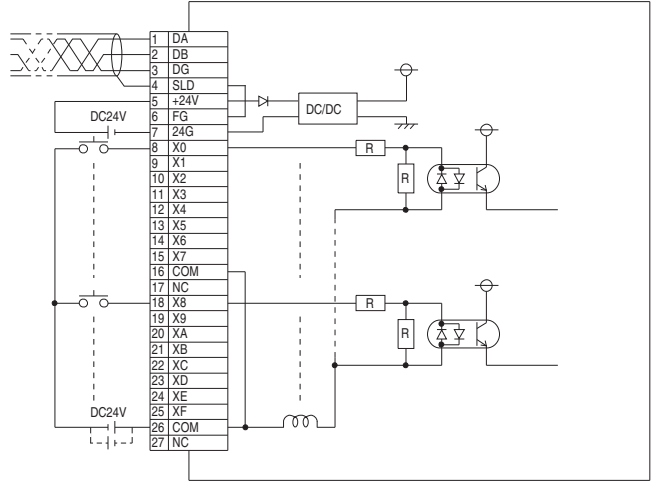


## External Connections

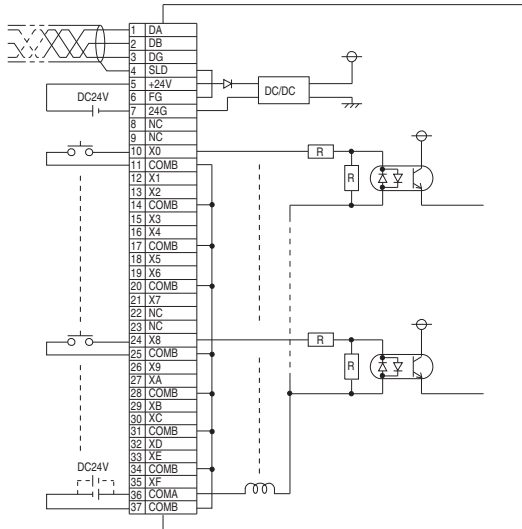
**AJ65SBTB3-16D type**



**AJ65BTB1-16D type**

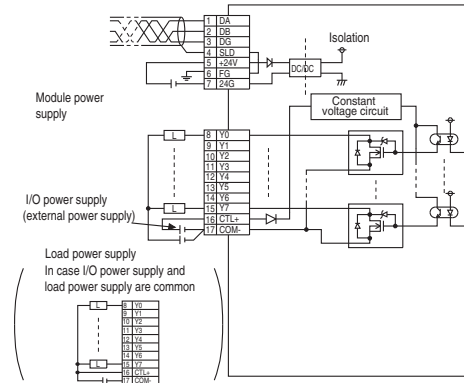


**AJ65BTB2-16D type**

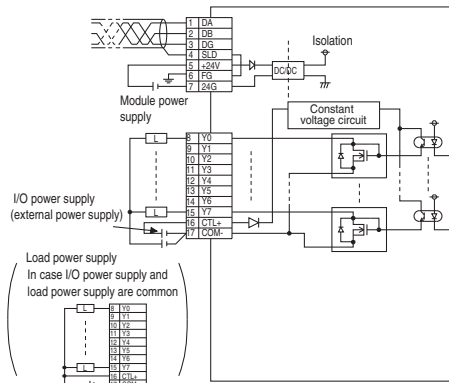


### Output Modules

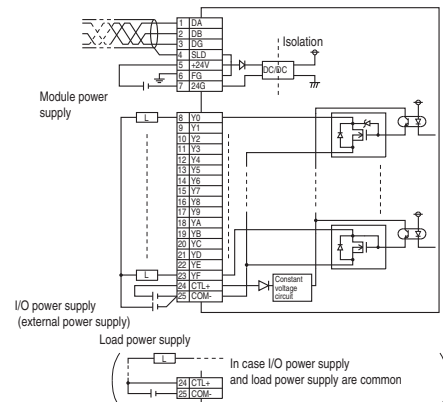
**AJ65SBTB1-8T type**



**AJ65SBTB1-8T1 type**

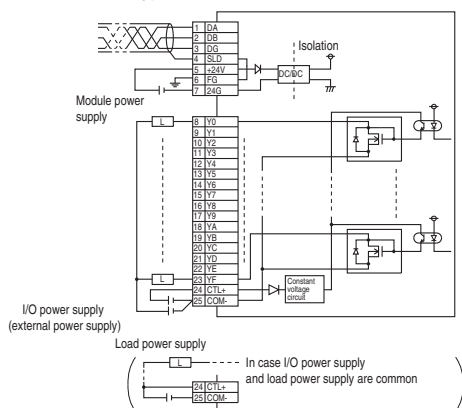


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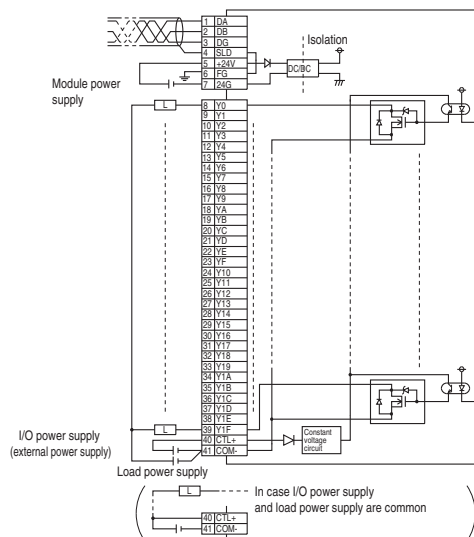


## External Connections

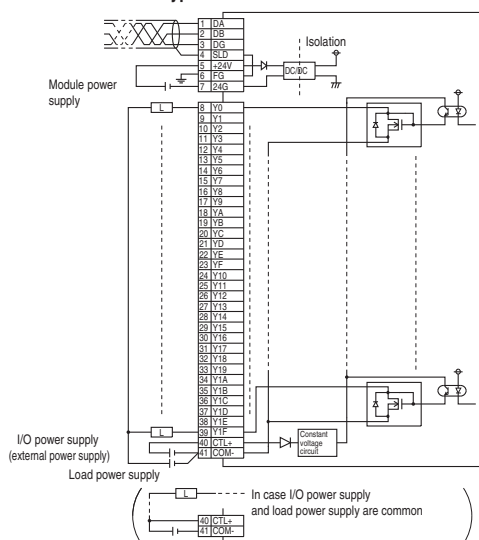
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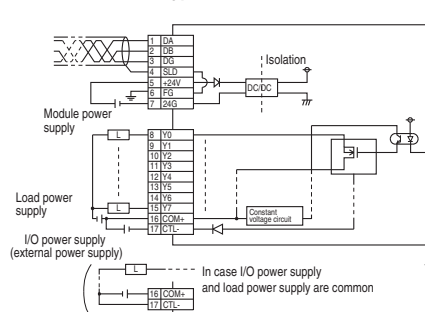
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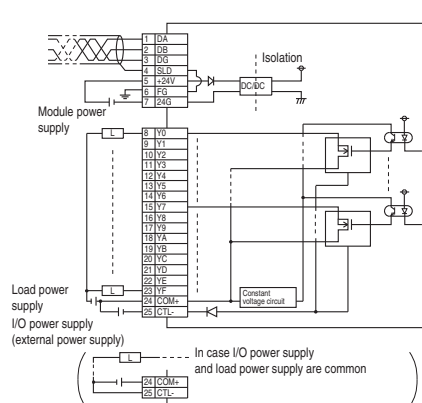
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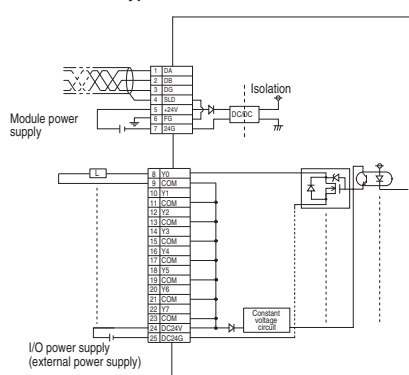
**AJ65SBTB1-8TE type**



**AJ65SBTB1-16TE type**

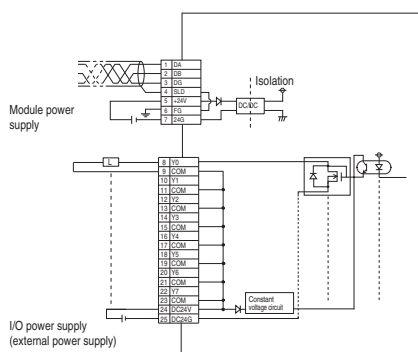


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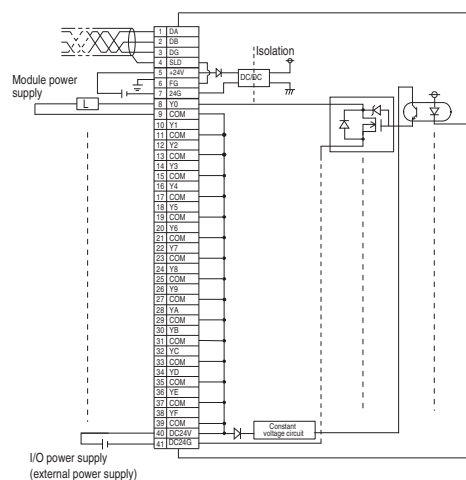


## External Connections

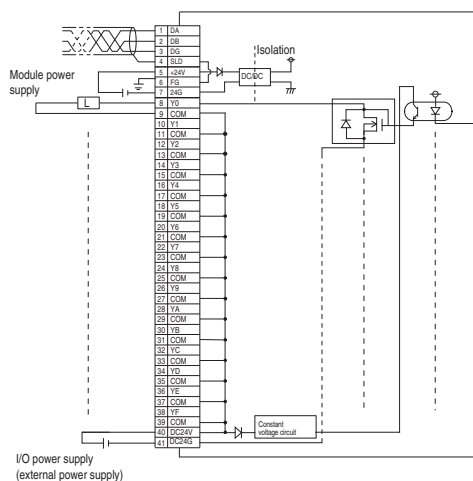
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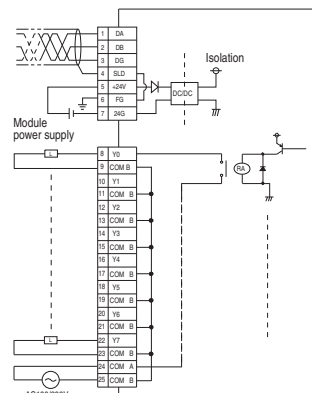
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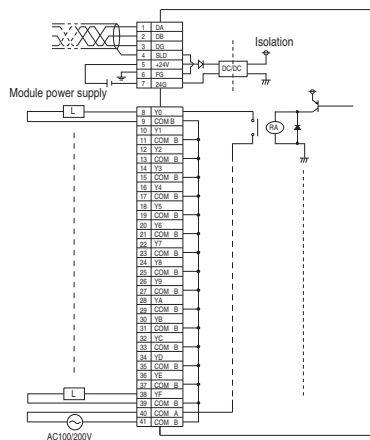
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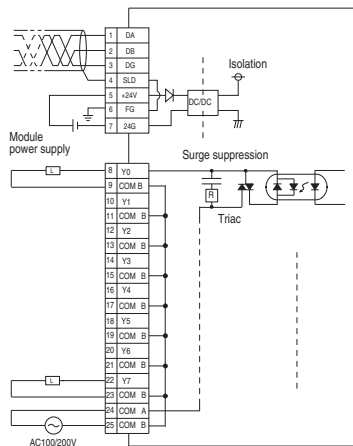
**AJ65SBTB2N-8R type**



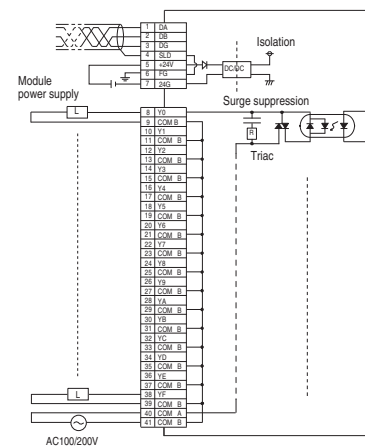
AJ65SBTB2N-16R type



**AJ65SBTB2N-8S type**



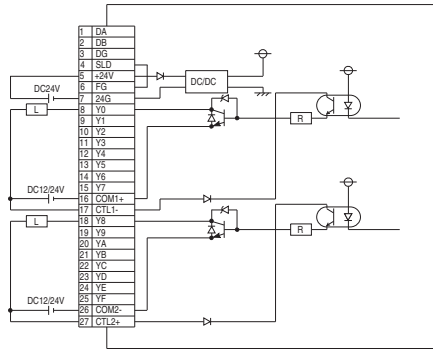
AJ65SBTB2N-16S type



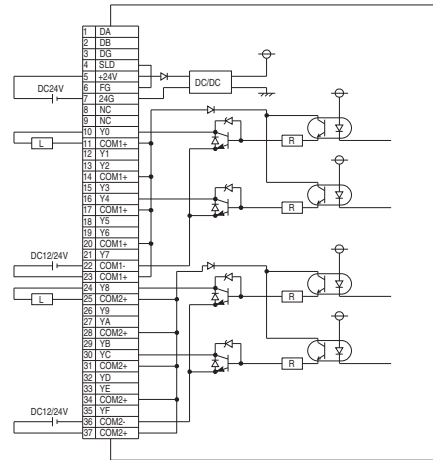
# External Connections

## Output Modules

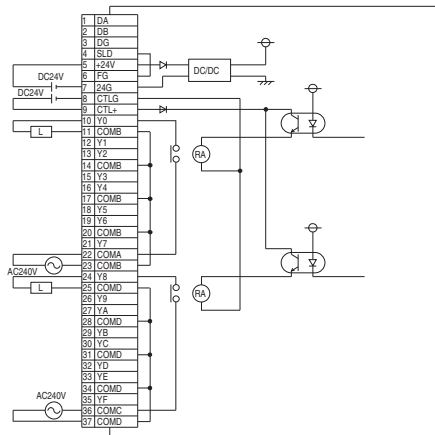
AJ65BTB1-16T type



AJ65BTB2-16T type

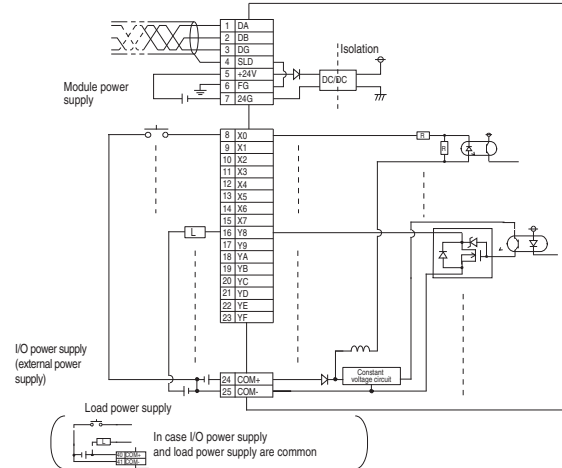


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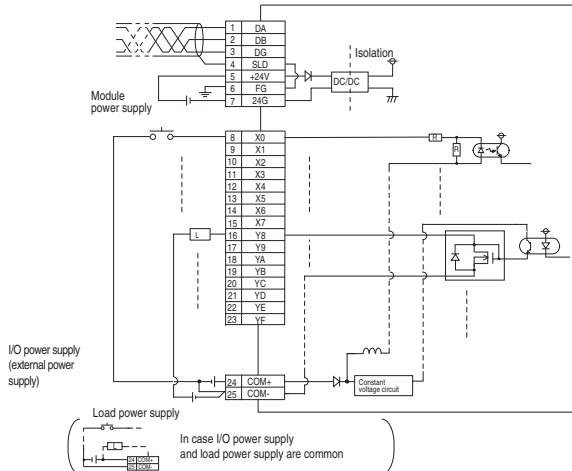


## Combination Input/Output Modules

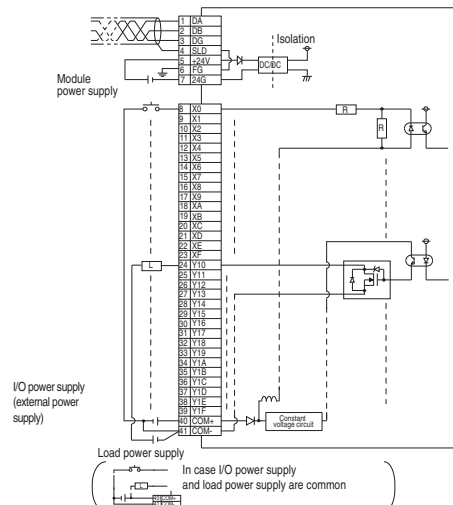
AJ65SBTB1-16DT, AJ65SBTB1-16DT1 type



AJ65SBTB1-16DT2, AJ65SBTB1-16DT3 type

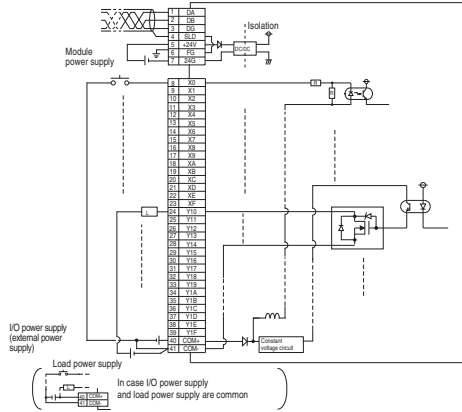


AJ65SBTB1-32DT, AJ65SBTB1-32DT1 type

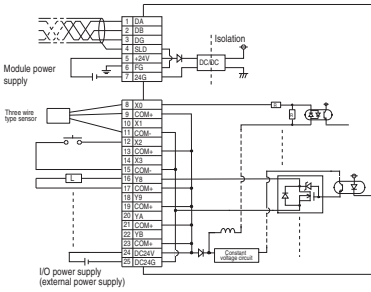


## External Connections

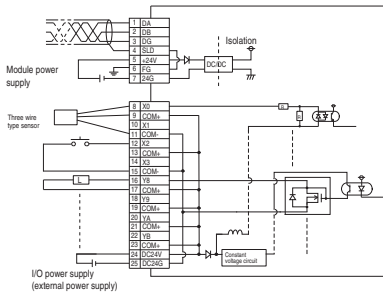
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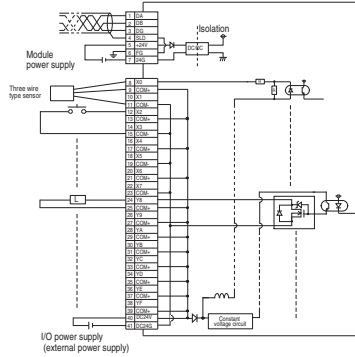
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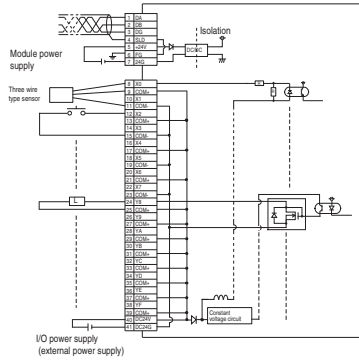
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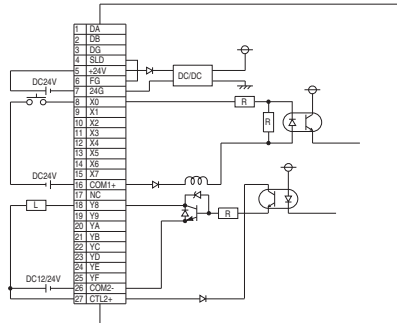
AJ65SBTB32-16DT type



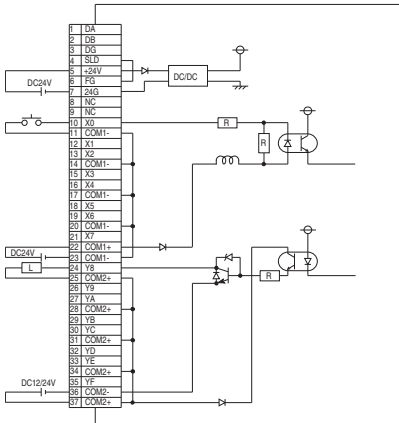
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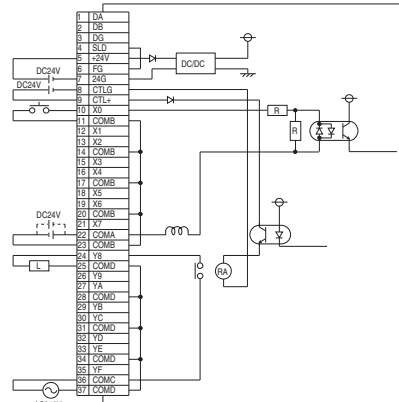
AJ65BTB1-16DT type



AJ65BTB2-16DT type



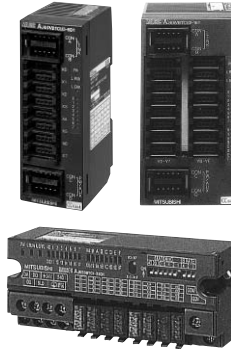
AJ65BTB2-16DR type



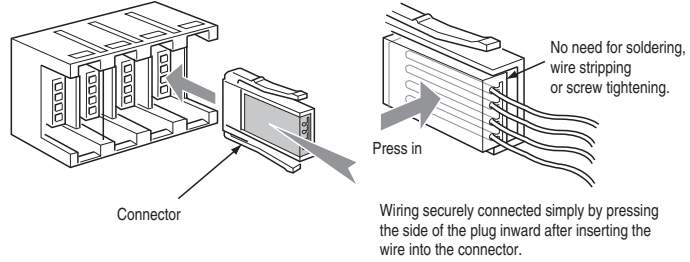


## CC-Link Remote I/O: AJ65SBTC□-□ / AJ65VBTCU□-□ One-Touch Connector Type

- One touch connector offers labor and material cost savings;  
No stripping of cable or lugs required.
- IDC type connection makes a reliable contact.
- Connectors available separately.
- All models UL • cUL listed and CE certified.



• One Touch Connectors



## Performance Specifications

For a detailed description of the connectors see introduction to this section.

Input Module Model Name	Input Type		Number of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Internal Current Consumption
						ON Voltage	OFF Voltage	OFF—ON	ON—OFF			
AJ65SBTC1-32D	DC input	+COM/-COM common type	32 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	One wire type	32 pts 1 com	45mA
AJ65SBTC1-32D1	DC input	+COM/-COM common type	32 points	Photocoupler	24 VDC	15 V min.	3 V max.	0.2 ms max.	0.2 ms max.	One wire type	32 pts 1 com	45mA
AJ65SBTC4-16D	DC input	+COM/-COM common type	16 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	1.5 ms max.	Four wire type	16 pts 1 com	35mA
AJ65VBTCU3-8D1	DC input	+COM type	8 points	Photocoupler	24 VDC	15 V min.	3 V max.	0.2 ms max.	0.2 ms max.	Three wire type	8 pts 1 com	35mA
AJ65VBTCU3-16D1	DC input	+COM type	16 points	Photocoupler	24 VDC	15 V min.	3 V max.	0.2 ms max.	0.2 ms max.	Three wire type	16 pts 1 com	40mA

Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated Load Voltage	Max. Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption
						1 Point	1 Common	OFF—ON	ON—OFF					
AJ65SBTC1-32T	Transistor output	Sink type	32 points	Photocoupler	12/24 VDC	0.1A	3.2A	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type	32 points 1 common	60mA
AJ65SBTC1-32T1	Transistor output	Sink type	32 points	Photocoupler	12/24 VDC	0.1A	3.2A	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type	32 points 1 common	60mA
AJ65VBTCU2-8T	Transistor output	Sink type	8 points	Photocoupler	12/24 VDC	0.1A	0.8A	1 ms max.	1 ms max.	0.1 mA max.	Zener diode	Two wire type	8 points 1 common	35mA
AJ65VBTCU2-16T	Transistor output	Sink type	16 points	Photocoupler	12/24 VDC	0.1A	1.6A	1 ms max.	1 ms max.	0.1 mA max.	Zener diode	Two wire type	16 points 1 common	40mA

Combined I/O Module Model Name	I/O Type		Number of I/O Points	Isolation Method	Rated Input/Load Voltage	Operating Voltage		Maximum Load Current		Input Response Time	Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type on Input/Output Sides	Common Connection	Internal Current Consumption
						ON Voltage	OFF Voltage	1 Point	1 Common		OFF—ON	ON—OFF					
AJ65SBTC4-16DT	DC input / trans output	+COM type / sink type	8 pts / 8 pts	Photocoupler / photocoupler	24VDC/24VDC	14 V min.	6 V max.	0.5A	2.4A	1.5 ms max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	Four wire type / Four wire type	16 points 1 common	40mA
AJ65SBTC4-16DT2	DC input / trans output	+COM type / sink type	8 pts / 8 pts	Photocoupler / photocoupler	24VDC/24VDC	14 V min.	6 V max.	0.5A	2.4A	1.5 ms max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	Four wire type / Four wire type	16 points 1 common	40mA
AJ65SBTC1-32DT	DC input / trans output	+COM type / sink type	16 pts / 16 pts	Photocoupler / photocoupler	24VDC/24VDC	14 V min.	6 V max.	0.1A	1.6A	1.5 ms max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type / One wire type	32 points 1 common	50mA
AJ65SBTC1-32DT1	DC input / trans output	+COM type / sink type	16 pts / 16 pts	Photocoupler / photocoupler	24VDC/24VDC	15 V min.	3 V max.	0.1A	1.6A	0.2 ms max.	0.5 ms max.	1.5 ms max.	0.25 mA max.	Zener diode	One wire type / One wire type	32 points 1 common	50mA
AJ65SBTC1-32DT2	DC input / trans output	+COM type / sink type	16 pts / 16 pts	Photocoupler / photocoupler	24VDC/24VDC	14 V min.	6 V max.	0.1A	1.6A	1.5 ms max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	32 points 1 common	50mA
AJ65SBTC1-32DT3	DC input / trans output	+COM type / sink type	16 pts / 16 pts	Photocoupler / photocoupler	24VDC/24VDC	15 V min.	3 V max.	0.1A	1.6A	0.2 ms max.	0.5 ms max.	1.5 ms max.	0.1 mA max.	Zener diode	One wire type / One wire type	32 points 1 common	50mA

+COM: Positive common (sink) -COM: Negative common (source)

## Guide to Module Features

### 2. Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

### 3. Station number setting switches

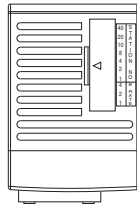
"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.  
 "1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

### 4. One-touch connector for communication

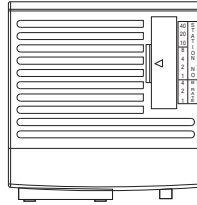
Connector pin no. 4 3 2 1				
Pin no.	4	3	2	1
Name	SLD	NC	V- / I-	V+ / I+

### 6. Connector for input/output signals

AJ65VBTCU□-8□



AJ65VBTCU□-16□



### 1. Operation LED display

LED name	Item checked
PW	Turns on when the power supply to the remote I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. It flashes if the station-number and transmission-speed settings are changed while the communication is active.
X0 to 1F Y0 to 1F	Displays the on/off status of input/output.

### 5. One-touch connector for power supply and FG

Connector pin no.

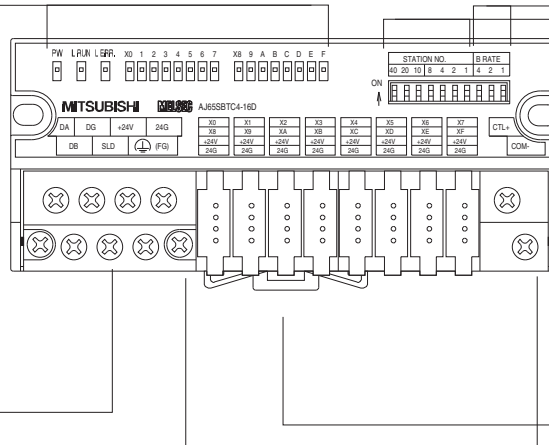
5 4 3 2 1

The diagram shows a vertical connector with five pins. The pins are numbered 5, 4, 3, 2, and 1 from top to bottom. The connector is shown in a perspective view, with the pins extending from a rectangular base.

Pin no.	5	4	3	2	1
Name	FGI	AG	24V	24V	FG

AJ65SBTC□-16□

### Operation LED display



### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

### Station number setting switches

"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.  
 "1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

### Terminal block for communication

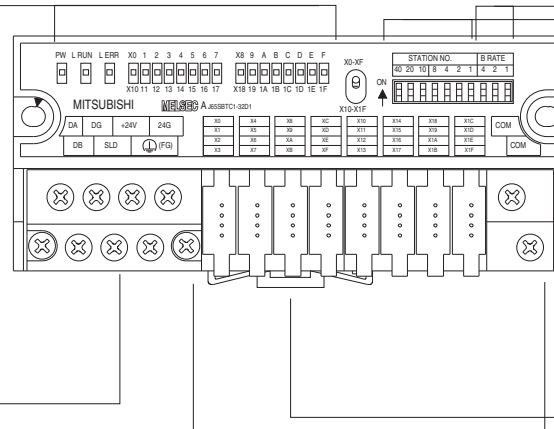
### Connector for input/output signals

### DIN rail hook

AJ65SBTC□-32□

### Operation LED display

LED name	Item checked
PW	Turns on when the power supply to the digital I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. It flashes if the station-number and transmission-speed settings are changed while the communication is active.
X0 to 1F X0 to 1F Y0 to 1F Y0 to 1F	Displays the on/off status of input/output. Lit in ON state and unlit in OFF state.



### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

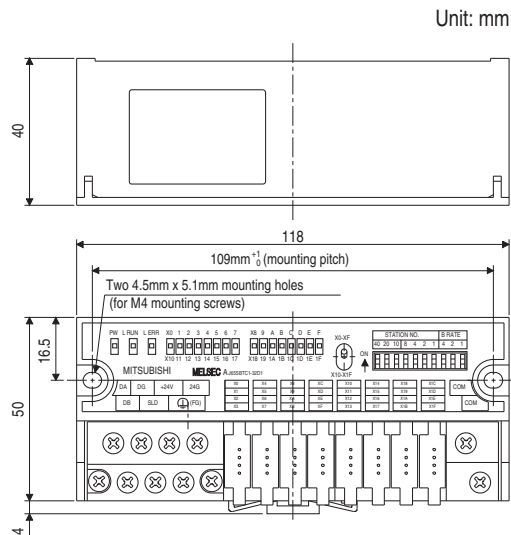
"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.  
 "1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

### Terminal block for communication

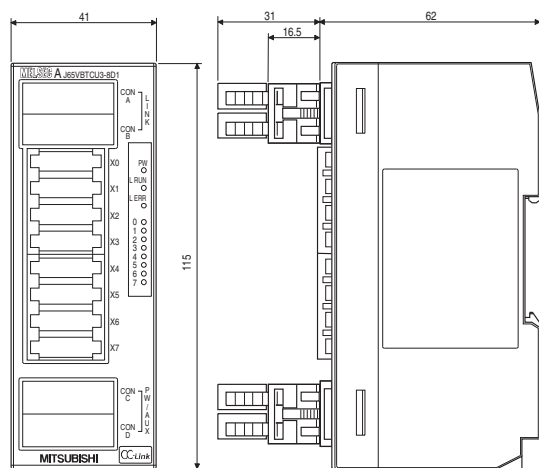
### Connector for input/output signals

## External Dimensions

AJ65SBTC1-32□  
AJ65SBTC4-16□

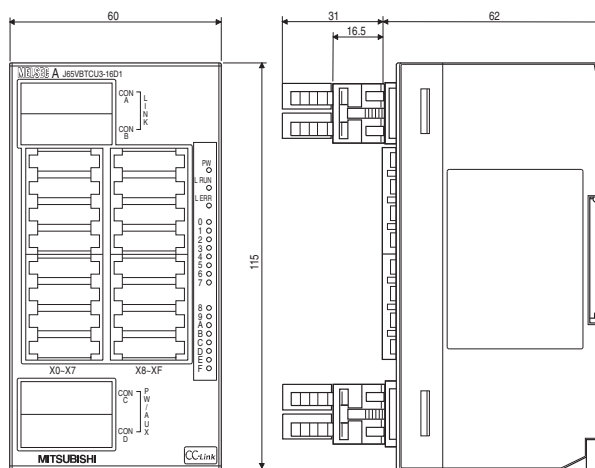


AJ65VBTCU□-8□



(Side view shows power and network connectors installed.)

AJ65VBTCU□-16□

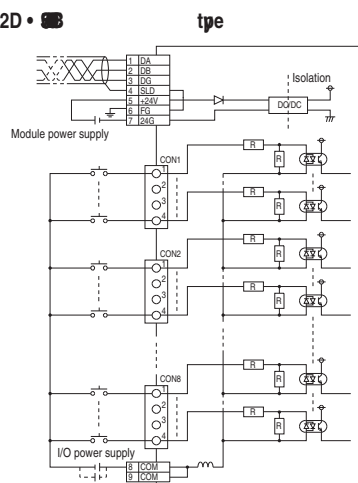


(Side view shows power and network connectors installed.)

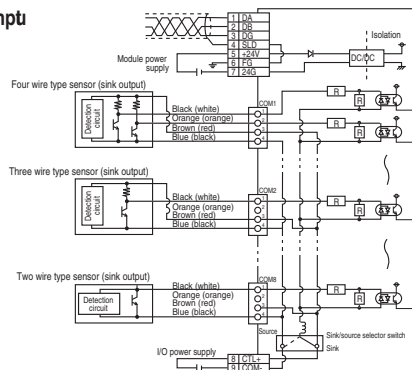
## External Connections

### Input Modules

AJ65SBTC1-32D •

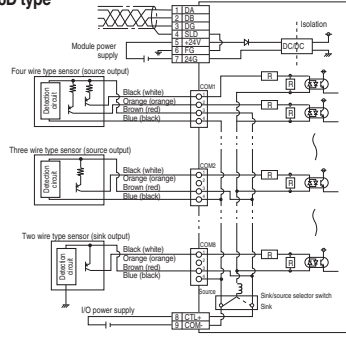


### Sink Input

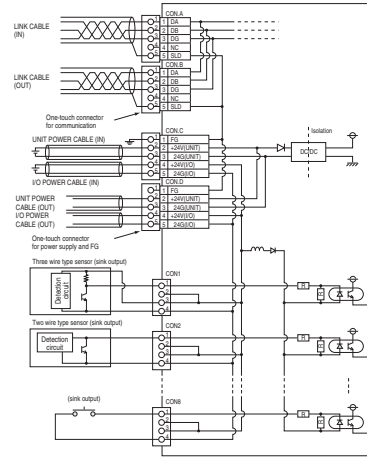


## External Connections

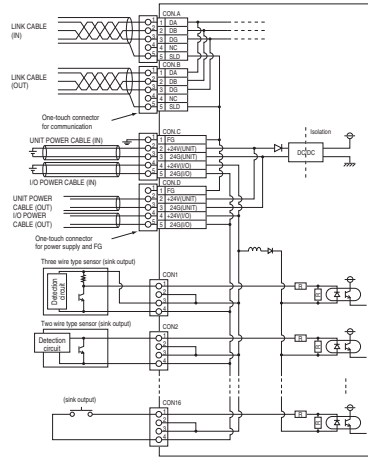
**AJ65SBTC4-16D type**  
Source input



type

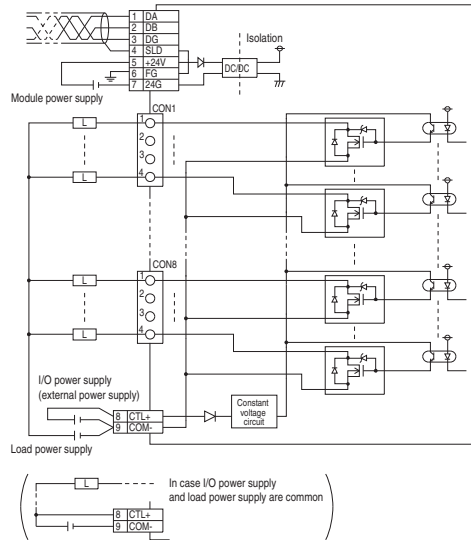


**AJ65VBTCU3-16D1 type**



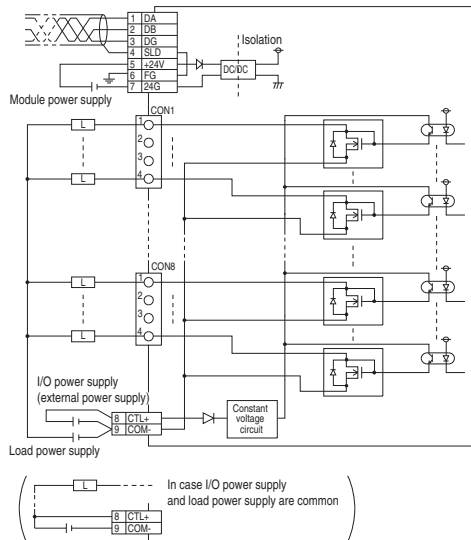
**Output modules**

type

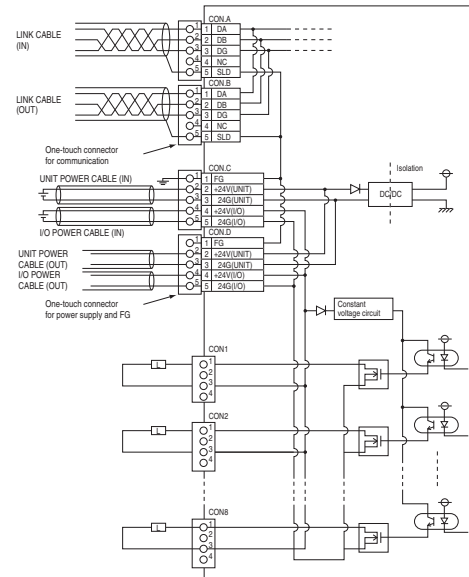


type

type

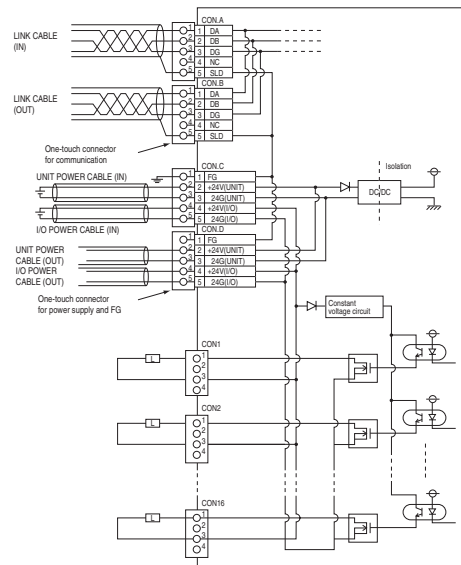


type



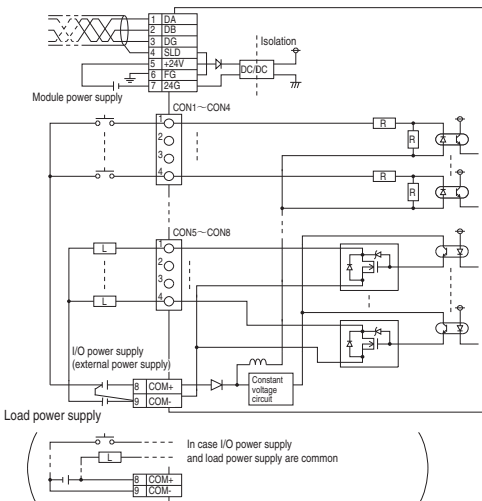
## External Connections

AJ65VBTCU2-16T type

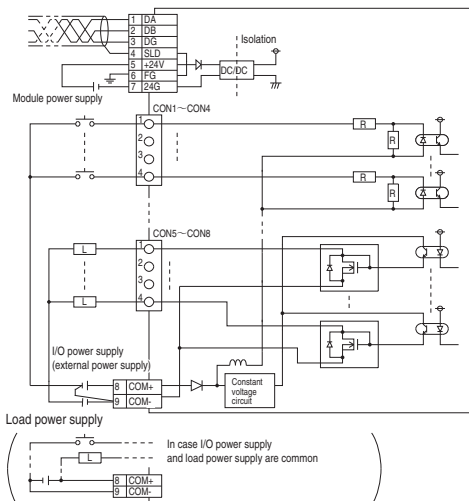


## Combination Input/Output Modules

AJ65SBTC1-32DT • AJ65SBTC1-32DT1 type

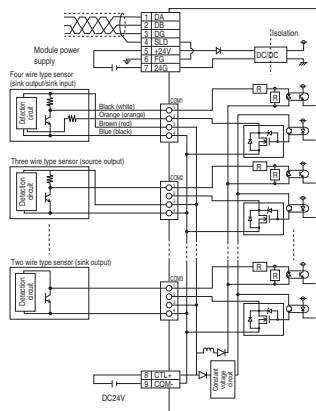


AJ65SBTC1-32DT2 • AJ65SBTC1-32DT3 type



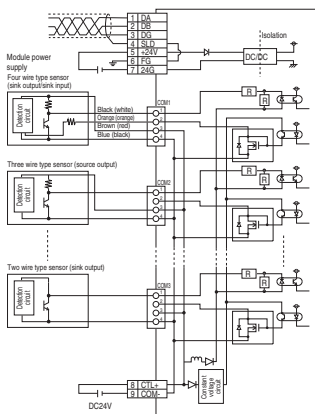
AJ65SBTC4-16DT type

Example of Connection with 4-, 3-, and 2-wire type Sensors

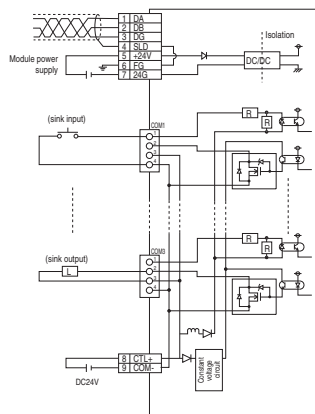


AJ65SBTC4-16DT2 type

Example of Connection with 4-, 3-, and 2-wire type Sensors



Other Example of Connection



## CC-Link Remote I/O: AJ65MBTL1N-□ Embedded I/O Adapters

- Intended for OEM System Designers needing to embed a CC-Link network connection in their own products.
- Each device offers differing amounts of discrete I/O to interface to the OEM device.
- PCB mounted device.
- All modules UL • cUL listed and CE certified.



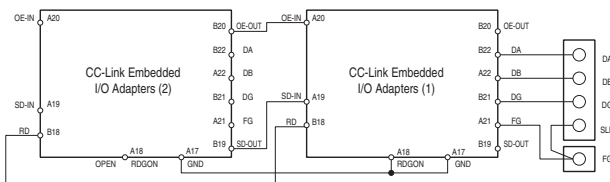
### Performance Specifications

Item	Input Adapter		Output Adapter		I/O Combination Adapter
	AJ65MBTL1N-16D	AJ65MBTL1N-32D	AJ65MBTL1N-16T	AJ65MBTL1N-32T	AJ65MBTL1N-16DT
Input/Output Type	DC input	DC input	Transistor output	Transistor output	DC input / Transistor output
	+COM type	+COM type	Sink type	Sink type	+COM type / Sink type
Number Of Input/ Output Points	16 points	32 points	16 points	32 points	8 points / 8 points
Isolation Method	Photocoupler	Photocoupler	Photocoupler	Photocoupler	Photocoupler / Photocoupler
Rated Input/ Load Voltage	24 VDC	24 VDC	12/24 VDC	12/24 VDC	24 VDC / 24 VDC
Maximum Load Current	1 Point	—	0.1A	0.1A	0.1A
	1 Common	—	1.6A	3.2A	0.8A
Operating Voltage	ON Voltage	18 V min.	—	—	14 V min. / —
	OFF Voltage	6 V max.	—	—	6 V max. / —
Response Time	OFF—ON	1.5 ms max.	1.0 ms max.	1.0 ms max.	1.5 ms max. / 1.0 ms max.
	ON—OFF	1.5 ms max.	1.0 ms max.	1.0 ms max.	1.5 ms max. / 1.0 ms max.
Leakage Current	—	—	0.1mA	0.1mA	±0.1mA
Surge Suppression	—	—	Zener diode	Zener diode	— / Zener diode
External Connection Wire Type	44 pins (2 rows)	62 pins (2 rows)	44 pins (2 rows)	62 pins (2 rows)	44 pins (2 rows)
Common Connection	16 points 1common	32 points 1common	16 points 1 common	32 points 1 common	16 points 1 common
Current Consumption	35mA	45mA	50mA	60mA	50mA

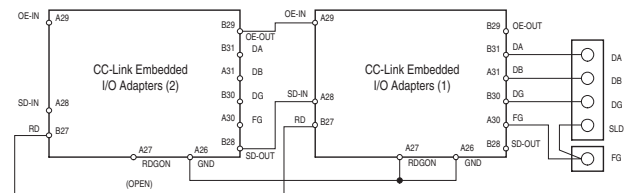
\* +COM: Positive common (sink)

### Cascade Connection Method

AJ65MBTL1N-16D  
AJ65MBTL1N-16T  
AJ65MBTL1N-16DT



AJ65MBTL1N-32D  
AJ65MBTL1N-32T



Reserve at least 5mm between I/O modules.

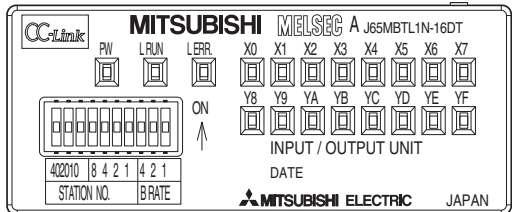


# Adapter Features

## AJ65MBTL1N-□

### LED display

LED name	Item checked
PW	Lit when the embedded I/O module of CC-Link is turned on.
L RUN	Checks if the embedded I/O module of CC-Link communicates correctly with the master station. The lamp lights up upon reception of correct data from the master station, or it is unit until time-out.
L ERR	Lit: Communication data error (CRC error), out-of-range setting at station number setting or data link transmission speed setting switch Blink at certain intervals: Modification of station number setting or transmission speed setting switch setting in power-on state Blink at irregular intervals: Missing terminator, noise effect on embedded I/O module or special cable of CC-Link
XO-XF / XO-X1F YO-YF / YO-Y1F	The ON/OFF state of the input/output is displayed. Lit in ON state and unit in OFF state.



### Transmission speed setting switch

Setting value	Transmission speed
0	156kbps
1	625kbps
2	2.5Mbps
3	5.0Mbps
4	10Mbps

### Station number setting switches

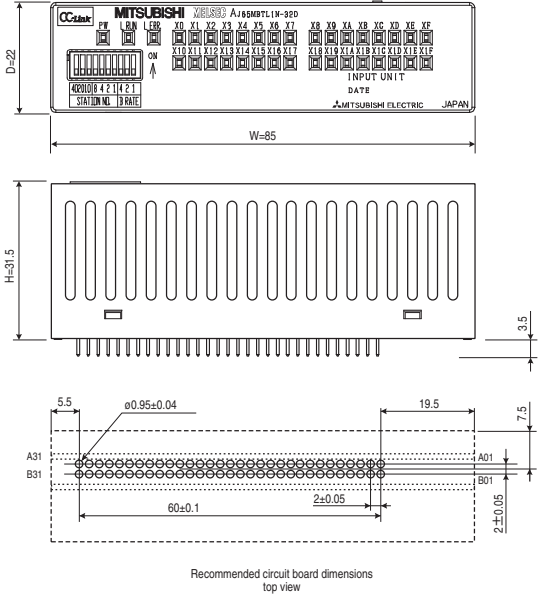
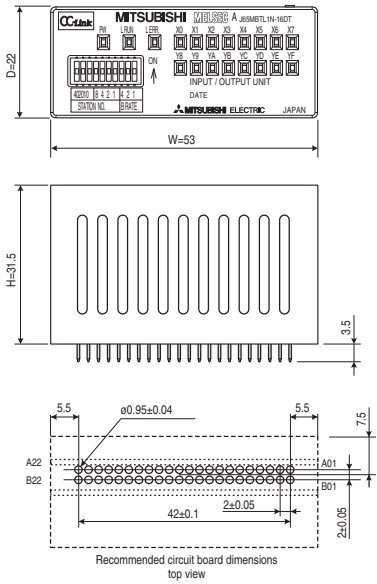
"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.  
"1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

# External Dimensions

AJ65MBTL1N-16DT  
AJ65MBTL1N-16T  
AJ65MBTL1N-16D

AJ65MBTL1N-32D  
AJ65MBTL1N-32T

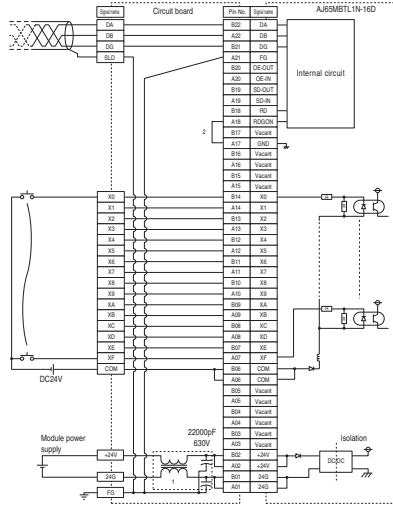
Unit: mm



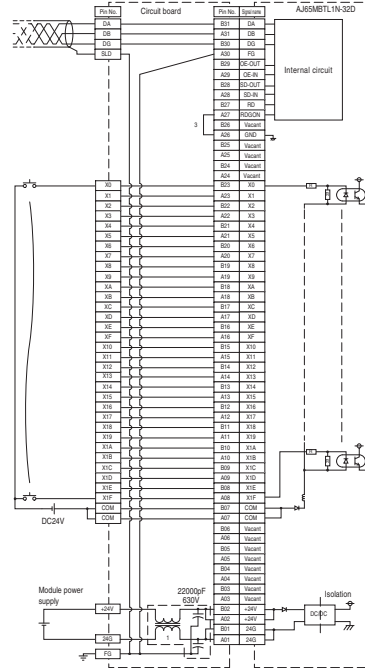
## External Connections

### Input Module

AJ65MBTL1N-16D

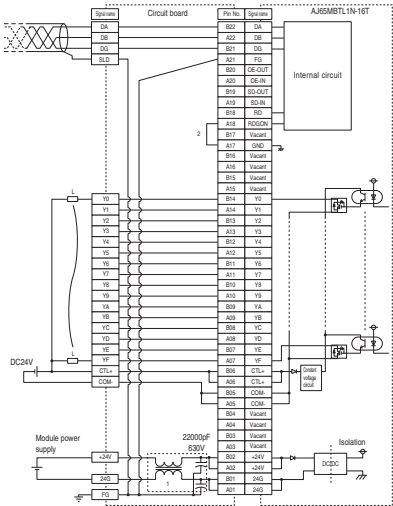


AJ65MBTL1N-32D



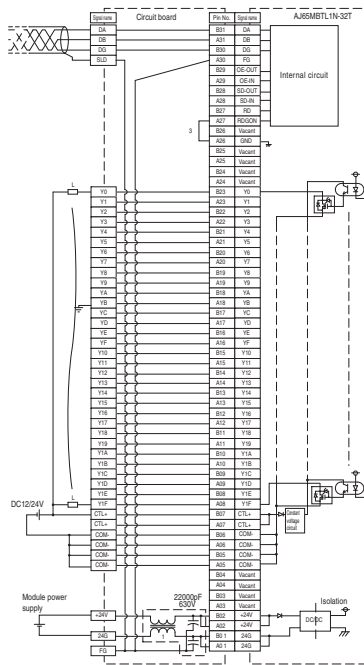
### Output Module

AJ65MBTL1N-16T



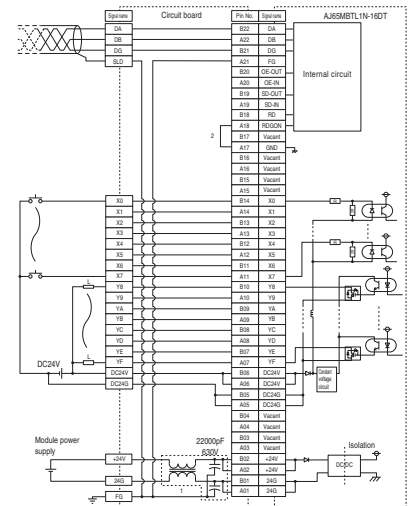
### Output Module

AJ65MBTL1N-32T



### Combination Input / Output Module

AJ65MBTL1N-16DT



\*1: Add according to environmental noise when necessary.  
Not supplied.

\*2: Connect A17 and A18 if cascade connection is not made.

\*3: Connect A26 and A27 if cascade connection is not made.

## CC-Link Remote I/O: AJ65FBTA□-16□ • AJ65SBTW4-16□ Water Resistant Connector Type

- Water resistant I/O power and network connections certified to IP67.
- “F Type” modules can be replaced without disrupting the network.
- Standard M12 connections.
- F Type modules offer built-in terminating resistors, 55°C operating temperature.
- W Type modules offer waterproof screw terminal connections for power and network connections.
- Connectors available from a variety of third party sources.
- All models UL • cUL listed and CE certified.

Dustproof and waterproof connection caps are available to protect unused connectors. See the introduction to this section.



AJ65SBTW4-16□

AJ65FBTA42-16□

## Performance Specifications

Item	Input Module Model Name			Output Module Model Name		I/O Module Model Name		
	AJ65FBTA4-16D	AJ65FBTA4-16DE	AJ65SBTW4-16D	AJ65FBTA2-16T	AJ65FBTA2-16TE	AJ65FBTA42-16DT	AJ65FBTA42-16DTE	AJ65SBTW4-16DT
Input/Output Type	DC input	DC input	DC input	Transistor output	Transistor output	DC input / transistor output	DC input / transistor output	DC input / transistor output
	+COM: Positive common (Sink)	−COM: Negative common (Source)	+COM: Positive common(Sink) −COM: Negative common(Source) common type	Sink type	Source type	+COM: Positive common (Sink) / sink type	−COM: Negative common (Source) / source type	+COM: Positive common (Sink) / sink type
Number of Input/Output Points	16 points	16 points	16 points	16 points	16 points	8 points/8 points	8 points/8 points	8 points/8 points
Isolation Method	Photocoupler	Photocoupler	Photocoupler	Photocoupler	Photocoupler	Photocoupler /photocoupler	Photocoupler /photocoupler	Photocoupler /photocoupler
Rated Input/Load Voltage	24 VDC	24 VDC	24 VDC	12/24VDC	12/24VDC	24 VDC/24 VDC	24 VDC/24 VDC	24 VDC/24 VDC
Maximum Load Current	1 Point	—	—	0.5A	1.0A	0.5A	1.0A	0.5A
	1 Common	—	—	4.0A	4.0A	2.4A	4.0A	2.4A
Operating Voltage	ON Voltage	14 V min.	14 V min.	—	—	14 V min.	14 V min.	14 V min.
	OFF Voltage	6 V max.	6 V max.	—	—	6 V max.	6 V max.	6 V max.
Response Time	OFF—ON	1.5 ms max.	1.5 ms max.	0.5 ms max.	0.5 ms max.	1.5 ms/0.5 ms max.	1.5 ms/0.5 ms max.	1.5 ms/0.5 ms max.
	ON—OFF	1.5 ms max.	1.5 ms max.	1.5 ms max.	1.5 ms max.	1.5 ms/1.5ms max.	1.5 ms/1.5 ms max.	1.5 ms/0.5 ms max.
Surge Suppression	—	—	—	Zener diode	Zener diode	Zener diode	Zener diode	Zener diode
External Connection Wire Type	Four wire type	Four wire type	Four wire type	Two wire type	Two wire type	Four wire type / two wire type	Four wire type / two wire type	Four wire type / two wire type
Common Connection	16 points 1 common	16 points 1 common	16 points 1 common	16 points 1 common	16 points 1 common	8 points 1 common /8 points 1 common	8 points 1 common /8 points 1 common	8 points 1 common /8 points 1 common
Current Consumption	40mA	40mA	35mA	50mA	50mA	50mA	45mA	40mA
Cable Diameter Range For Water Resistant Compression Fitting	—	—	Fitting cable size ø4.0mm to 8.0mm / -	—	—	—	—	Fitting cable size ø4.0mm to 8.0mm / -

# Module Features

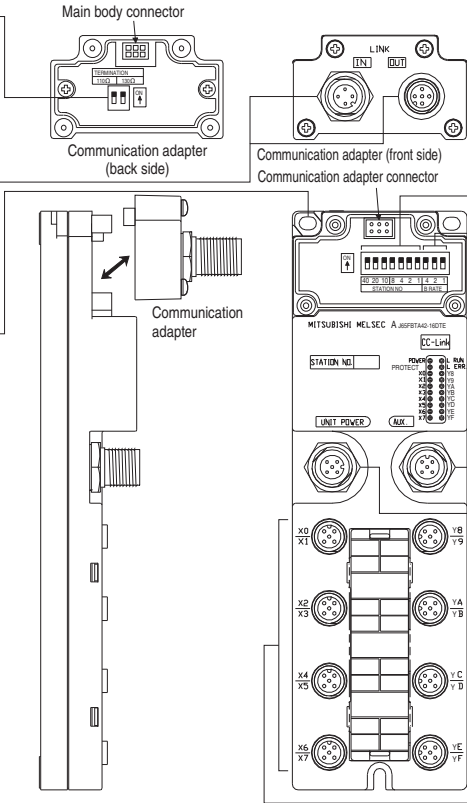
## AJ65FBTA□-16□

### Terminal resistor setting

Dip switch 1	Dip switch 2	Description
OFF	OFF	No terminal resistor
ON	OFF	110 terminal On
OFF	ON	130 terminal On
ON	ON	Setting prohibited

### Waterproof connector for transmission line

### FG metal fittings



### Station number setting switches

\*10, \*20, and \*40 in STATION NO. are used for setting the second digit of the station number.  
\*1, \*2, \*4, and \*8 in STATION NO. are used for setting the first digit of the station number.

### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

### Operating condition LED display

	Description
POWER	On: Power supply is turned on.
L RUN	On: Communication is normal.
L ERR	Off: Communication is normal.
PROTECT	Off: Normal
	On: Protection function is enabled.

### Waterproof connector for power-supply line

### Waterproof connector for input/output

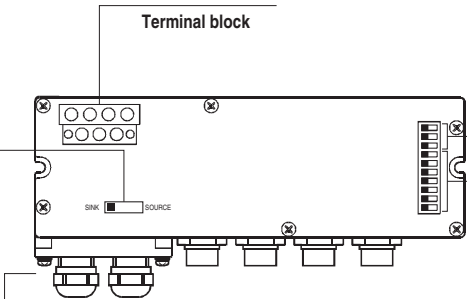
\*All switches are mounted internally to maintain water resistance.

## AJ65SBTW4-16□

### Sink/source selector switch (only for AJ65SBTW4-16D)

Switch the +COM, -COM type to either sink or source type.

### Module top-cover mounting screw



### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

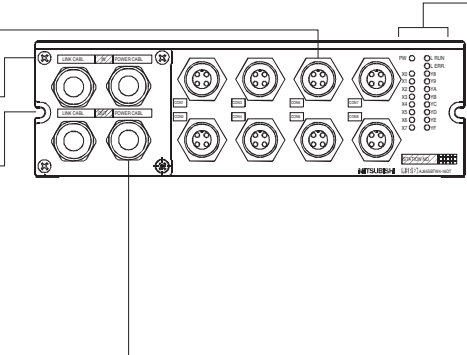
### Station number setting switches

\*10, \*20, and \*40 in STATION NO. are used for setting the second digit of the station number.  
\*1, \*2, \*4, and \*8 in STATION NO. are used for setting the first digit of the station number.

### Waterproof connector for input/output line

### Module front-cover mounting screw

### FG metal fittings



Water resistant compression fitting for transmission/module power supply line.

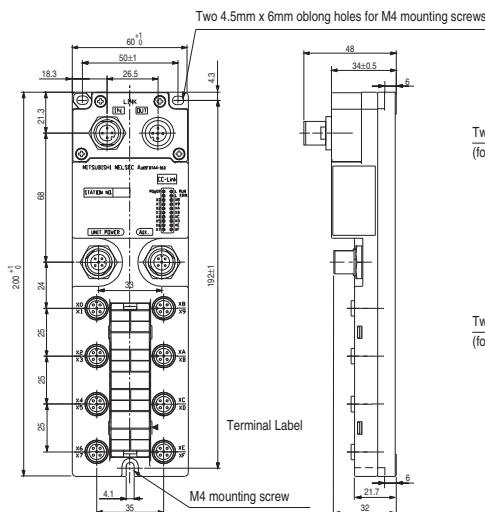
### Operation LED display

LED name	Item checked
PW	Turns on when the power supply to the remote I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. It turns on if the station-number and transmission-speed settings are changed while the communication is active.
X0 to 1F Y0 to 1F	Displays the on/off status of input. The LEDs turn on in the "On" state, and off in the "Off" state.

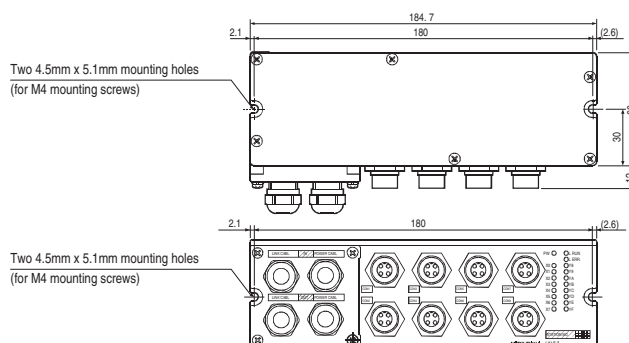
\*All switches and terminal blocks are mounted internally to maintain water resistance.

## External Dimensions

AJ65FBTA4-16D • AJ65FBTA4-16DE  
AJ65FBTA2-16T • AJ65FBTA2-16TE  
AJ65FBTA42-16DT • AJ65FBTA42-16DTE

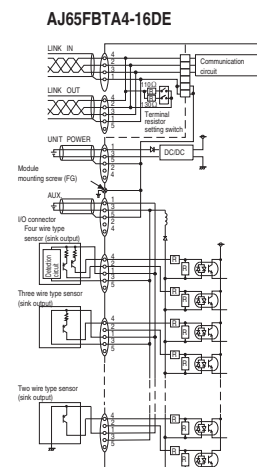
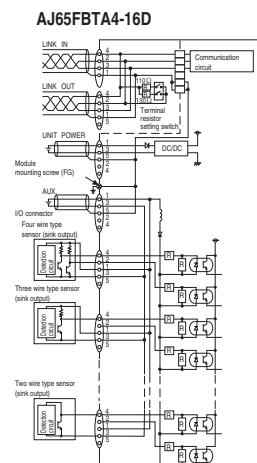





AJ65SBTW4-16D • AJ65SBTW4-16DT



## External Connections

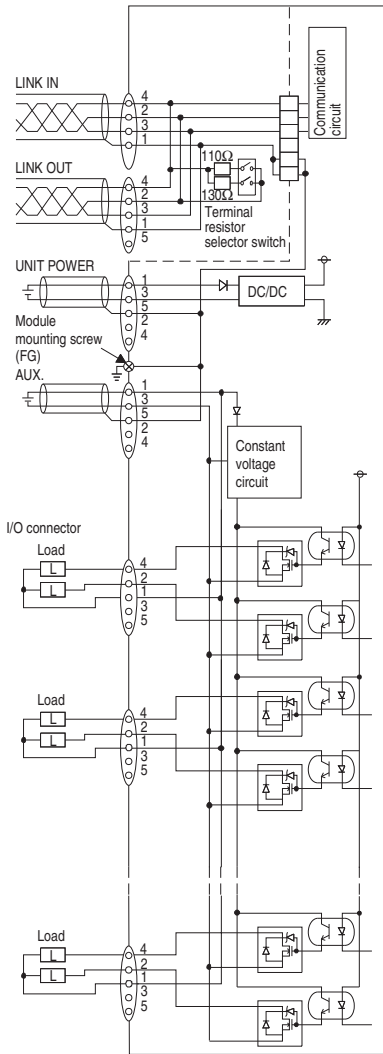
## Input Module



Communication connector			Pin layout		Communication connector		
Pin no.	LINK IN	LINK OUT			Pin no.	LINK IN	LINK OUT
1	SLD	SLD			Pin no.	LINK IN	LINK OUT
2	DB	DB			2	DB	DB
3	DG	DG			3	DG	DG
4	DA	DA			4	DA	DA
5	No pin	Vacant	5	No pin	Vacant		
Power supply connector					Power supply connector		
Pin no.	UNIT POWER	AUX.			Pin no.	UNIT POWER	AUX.
1	+24V (UNIT)	+24V (I/O)			1	+24V (UNIT)	+24V (I/O)
2	Vacant	Vacant			2	Vacant	Vacant
3	24G (UNIT)	24G (I/O)			3	24G (UNIT)	24G (I/O)
4	Vacant	Vacant	4	Vacant	Vacant		
5	FG	FG	5	FG	FG		
I/O connector					I/O connector		
Pin no.	I/O connector	Pin no.			Pin no.	I/O connector	Pin no.
	1 +24V				1	+24V	
X0	2 X1	X8			2	X1	X8
X1	3 24G	X9			3	24G	X9
	4 X0		4	X0			
	5 Vacant		5	Vacant			
	1 +24V		1	+24V			
X2	2 X3	XA	2	X3	2		
X3	3 24G	XB	3	24G	3		
	4 X2		4	X2	4		
	5 Vacant		5	Vacant	5		
	1 +24V		1	+24V			
X4	2 X5	XC	2	X5	2		
X5	3 24G	XD	3	24G	3		
	4 X4		4	X4	4		
	5 Vacant		5	Vacant	5		
	1 +24V		1	+24V			
X6	2 X7	XE	2	X7	2		
X7	3 24G	XF	3	24G	3		
	4 X6		4	X6	4		
	5 Vacant		5	Vacant	5		
	1 +24V		1	+24V			
	2 X1		2	X1			
	3 24G		3	24G			
	4 X0		4	X0			
	5 Vacant		5	Vacant			
	1 +24V		1	+24V			
	2 X3		2	X3			
	3 24G		3	24G			
	4 X2		4	X2			
	5 Vacant		5	Vacant			
	1 +24V		1	+24V			
	2 X5		2	X5			
	3 24G		3	24G			
	4 X4		4	X4			
	5 Vacant		5	Vacant			
	1 +24V		1	+24V			
	2 X7		2	X7			
	3 24G		3	24G			
	4 X6		4	X6			
	5 Vacant		5	Vacant			

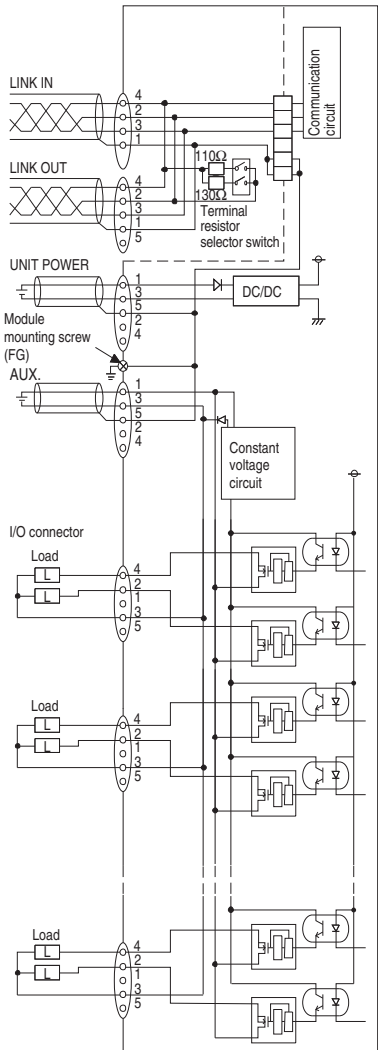
External Connections

Output Modules  
AJ65FBTA2-16T



Communication circuit			
Pin no.	LINK IN	LINK OUT	
1	SLD	SLD	
2	DB	DB	
3	DG	DG	
4	DA	DA	
5	No pin	Vacant	
Power supply connector			
Pin no.	UNIT POWER	AUX.	
1	+24V (UNIT)	+24V (I/O)	
2	Vacant	Vacant	
3	24G (UNIT)	24G (I/O)	
4	Vacant	Vacant	
5	FG	FG	
I/O connector			
Pin no.	Signal name	Pin no.	Signal name
Y0	1 +24V	1	+24V
Y1	2 Y1	2	Y9
	3 Vacant	3	Vacant
	4 Y0	4	Y8
	5 Vacant	5	Vacant
Y2	1 +24V	1	+24V
Y3	2 Y3	2	YB
	3 Vacant	3	Vacant
	4 Y2	4	YA
	5 Vacant	5	Vacant
Y4	1 +24V	1	+24V
Y5	2 Y5	2	YD
	3 Vacant	3	Vacant
	4 Y4	4	YC
	5 Vacant	5	Vacant
Y6	1 +24V	1	+24V
Y7	2 Y7	2	YF
	3 Vacant	3	Vacant
	4 Y6	4	YE
	5 Vacant	5	Vacant

AJ65FBTA2-16TE



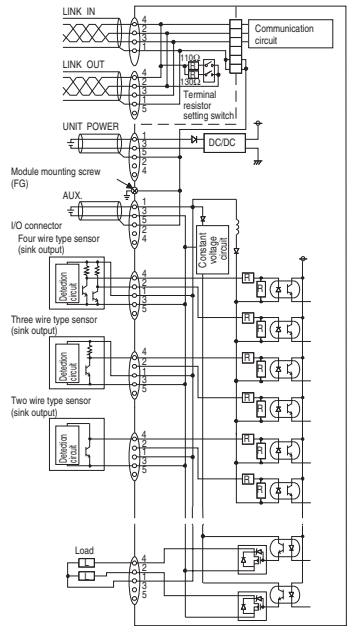
Communication circuit			
Pin no.	LINK IN	LINK OUT	
1	SLD	SLD	
2	DB	DB	
3	DG	DG	
4	DA	DA	
5	No pin	Vacant	
Power supply connector			
Pin no.	UNIT POWER	AUX.	
1	+24V (UNIT)	+24V (I/O)	
2	Vacant	Vacant	
3	24G (UNIT)	24G (I/O)	
4	Vacant	Vacant	
5	FG	FG	
I/O connector			
Pin no.	Signal name	Pin no.	Signal name
Y0	1 Vacant	1	Vacant
Y1	2 Y1	2	Y9
	3 24G	3	24G
	4 Y0	4	Y8
	5 Vacant	5	Vacant
Y2	1 Vacant	1	Vacant
Y3	2 Y3	2	YB
	3 24G	3	24G
	4 Y2	4	YA
	5 Vacant	5	Vacant
Y4	1 Vacant	1	Vacant
Y5	2 Y5	2	YD
	3 24G	3	24G
	4 Y4	4	YC
	5 Vacant	5	Vacant
Y6	1 Vacant	1	Vacant
Y7	2 Y7	2	YF
	3 24G	3	24G
	4 Y6	4	YE
	5 Vacant	5	Vacant



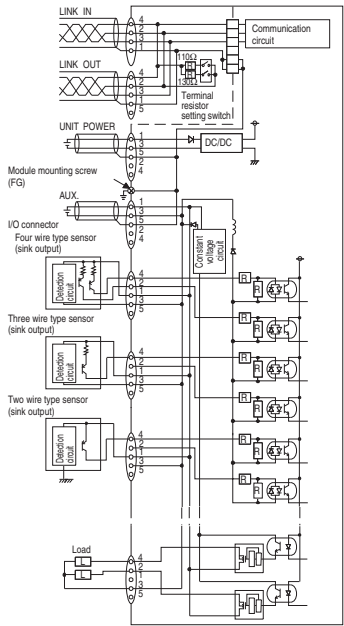
# External Connections





## Combination Input / Output Modules

AJ65FBTA42-16DT



AJ65FBTA42-16DTE

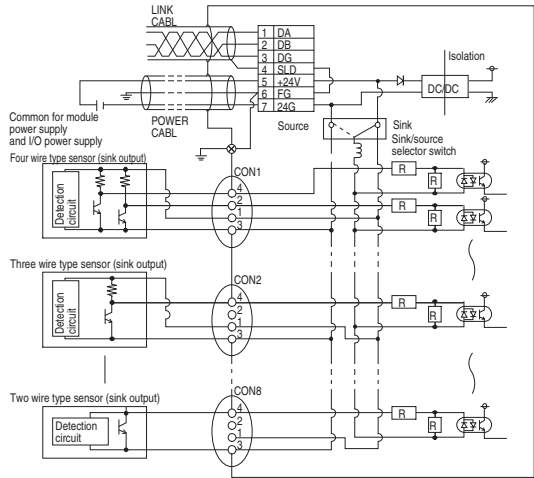


Communication connector					<div>Pin layout</div> <div><div>LINK IN</div><div>Male</div><div></div><div>LINK OUT</div><div>Female</div><div></div><div>UNIT POWER/AUX.</div><div>Male</div><div></div><div>I/O</div><div>Female</div><div></div><div>Front view</div></div> <th colspan="5">Communication connector</th>		Communication connector																																																																																																																																																																																																																																																																																																																																																																
Pin no.		LINK IN		LINK OUT			Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.	1		SLD		SLD	1		+24V (UNIT)		+24V (I/O)	2		DB		DB	2		Vacant		Vacant	3		DG		DG	3		24G (UNIT)		24G (I/O)	4		DA		DA	4		Vacant		Vacant	5		No pin		Vacant	5		FG		FG	Power supply connector					Power supply connector					Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.	1		+24V (UNIT)		+24V (I/O)	1		+24V (UNIT)		+24V (I/O)	2		Vacant		Vacant	2		Vacant		Vacant	3		24G (UNIT)		24G (I/O)	3		24G (UNIT)		24G (I/O)	4		Vacant		Vacant	4		Vacant		Vacant	5		FG		FG	5		FG		FG	I/O connector					I/O connector					Pin no.		Pin no.	Pin no.	Pin no.	Pin no.		Pin no.	Pin no.	Pin no.	X0 X1	1	+24V	Y8 Y9	1	+24V	X0 X1	1	+24V	Y8 Y9	1	Vacant	2	X1	2	Y9	2	X1	2	Y9	3	24G	3	Vacant	3	24G	3	24G	4	X0	4	Y8	4	X0	4	Y8	5	Vacant	5	Vacant	5	Vacant	5	Vacant	X2 X3	1	+24V	YA YB	1	+24V	X2 X3	1	+24V	YA YB	1	Vacant	2	X3	2	YB	2	X3	2	YB	3	24G	3	Vacant	3	24G	3	24G	4	X2	4	YA	4	X2	4	YA	5	Vacant	5	Vacant	5	Vacant	5	Vacant	X4 X5	1	+24V	YC YD	1	+24V	X4 X5	1	+24V	YC YD	1	Vacant	2	X5	2	YD	2	X5	2	YD	3	24G	3	Vacant	3	24G	3	24G	4	X4	4	YC	4	X4	4	YC	5	Vacant	5	Vacant	5	Vacant	5	Vacant	X6 X7	1	+24V	YE YF	1	+24V	X6 X7	1	+24V	YE YF	1	Vacant	2	X7	2	YF	2	X7	2	YF	3	24G	3	Vacant	3	24G	3	24G	4	X6	4	YE	4	X6	4	YE	5	Vacant	5	Vacant	5	Vacant	5	Vacant																						
Pin no.		UNIT POWER		AUX.			Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.	1		SLD		SLD	1		+24V (UNIT)		+24V (I/O)	2		DB		DB	2		Vacant		Vacant	3		DG		DG	3		24G (UNIT)		24G (I/O)	4		DA		DA	4		Vacant		Vacant	5		No pin		Vacant	5		FG		FG	Power supply connector					Power supply connector					Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.	1		+24V (UNIT)		+24V (I/O)	1		+24V (UNIT)		+24V (I/O)	2		Vacant		Vacant	2		Vacant		Vacant	3		24G (UNIT)		24G (I/O)	3		24G (UNIT)		24G (I/O)	4		Vacant		Vacant	4		Vacant		Vacant	5		FG		FG	5		FG		FG	I/O connector					I/O connector					Pin no.		Pin no.	Pin no.	Pin no.	Pin no.		Pin no.	Pin no.	Pin no.	X0 X1	1	+24V	Y8 Y9	1		+24V	X0 X1		1	+24V		Y8 Y9	1		Vacant	2	X1	2	Y9	2	X1	2	Y9	3	24G	3	Vacant	3	24G	3	24G	4	X0	4	Y8	4	X0	4	Y8	5	Vacant	5	Vacant	5	Vacant	5	Vacant	X2 X3		1	+24V		YA YB	1		+24V	X2 X3		1	+24V	YA YB	1	Vacant	2	X3	2	YB	2	X3	2	YB	3	24G	3	Vacant	3	24G	3	24G	4	X2	4	YA	4	X2	4	YA	5	Vacant	5	Vacant	5		Vacant	5		Vacant	X4 X5		1	+24V		YC YD	1	+24V	X4 X5	1	+24V	YC YD	1	Vacant	2	X5	2	YD	2	X5	2	YD	3	24G	3	Vacant	3	24G	3	24G	4	X4	4	YC	4	X4	4	YC	5		Vacant	5		Vacant	5		Vacant	5		Vacant	X6 X7	1	+24V	YE YF	1	+24V	X6 X7	1	+24V	YE YF	1	Vacant	2	X7	2	YF	2	X7	2	YF	3	24G	3	Vacant	3	24G	3	24G	4	X6	4	YE	4	X6	4	YE	5	Vacant	5	Vacant	5	Vacant	5	Vacant											
Pin no.		UNIT POWER		AUX.			Pin no.		UNIT POWER		AUX.	1		SLD		SLD	1		+24V (UNIT)		+24V (I/O)	2		DB		DB	2		Vacant		Vacant	3		DG		DG	3		24G (UNIT)		24G (I/O)	4		DA		DA	4		Vacant		Vacant	5		No pin		Vacant	5		FG		FG	Power supply connector					Power supply connector					Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.	1		+24V (UNIT)		+24V (I/O)	1		+24V (UNIT)		+24V (I/O)	2		Vacant		Vacant	2		Vacant		Vacant	3		24G (UNIT)		24G (I/O)	3		24G (UNIT)		24G (I/O)	4		Vacant		Vacant	4		Vacant		Vacant	5		FG		FG	5		FG		FG	I/O connector					I/O connector					Pin no.		Pin no.	Pin no.	Pin no.	Pin no.		Pin no.	Pin no.	Pin no.	X0 X1	1	+24V	Y8 Y9	1		+24V	X0 X1		1		+24V			Y8 Y9	1			Vacant		2	X1	2	Y9	2	X1	2	Y9	3	24G	3	Vacant	3	24G	3	24G	4	X0	4	Y8	4	X0	4	Y8	5	Vacant	5	Vacant	5	Vacant	5	Vacant	X2 X3			1	+24V			YA YB		1			+24V	X2 X3		1	+24V	YA YB	1	Vacant	2	X3	2	YB	2	X3	2	YB	3	24G	3	Vacant	3	24G	3	24G	4	X2	4	YA	4	X2	4	YA	5	Vacant		5	Vacant		5			Vacant	5			Vacant	X4 X5		1	+24V		YC YD	1	+24V	X4 X5	1	+24V	YC YD	1	Vacant	2	X5	2	YD	2	X5	2	YD	3	24G	3	Vacant	3	24G	3	24G	4	X4		4	YC		4	X4		4	YC		5		Vacant	5		Vacant	5		Vacant	5		Vacant	X6 X7	1	+24V	YE YF	1	+24V	X6 X7	1	+24V	YE YF	1	Vacant	2	X7	2	YF	2	X7	2	YF	3	24G	3	Vacant	3	24G	3	24G	4	X6	4	YE	4	X6	4	YE	5	Vacant	5	Vacant	5	Vacant	5	Vacant
Pin no.		UNIT POWER		AUX.																																																																																																																																																																																																																																																																																																																																																																			
1		SLD		SLD			1		+24V (UNIT)		+24V (I/O)																																																																																																																																																																																																																																																																																																																																																												
2		DB		DB	2		Vacant		Vacant																																																																																																																																																																																																																																																																																																																																																														
3		DG		DG	3		24G (UNIT)		24G (I/O)																																																																																																																																																																																																																																																																																																																																																														
4		DA		DA	4		Vacant		Vacant																																																																																																																																																																																																																																																																																																																																																														
5		No pin		Vacant	5		FG		FG																																																																																																																																																																																																																																																																																																																																																														
Power supply connector					Power supply connector																																																																																																																																																																																																																																																																																																																																																																		
Pin no.		UNIT POWER		AUX.	Pin no.		UNIT POWER		AUX.																																																																																																																																																																																																																																																																																																																																																														
1		+24V (UNIT)		+24V (I/O)	1		+24V (UNIT)		+24V (I/O)																																																																																																																																																																																																																																																																																																																																																														
2		Vacant		Vacant	2		Vacant		Vacant																																																																																																																																																																																																																																																																																																																																																														
3		24G (UNIT)		24G (I/O)	3		24G (UNIT)		24G (I/O)																																																																																																																																																																																																																																																																																																																																																														
4		Vacant		Vacant	4		Vacant		Vacant																																																																																																																																																																																																																																																																																																																																																														
5		FG		FG	5		FG		FG																																																																																																																																																																																																																																																																																																																																																														
I/O connector					I/O connector																																																																																																																																																																																																																																																																																																																																																																		
Pin no.		Pin no.	Pin no.	Pin no.	Pin no.		Pin no.	Pin no.	Pin no.																																																																																																																																																																																																																																																																																																																																																														
X0 X1	1	+24V	Y8 Y9	1	+24V	X0 X1	1	+24V	Y8 Y9	1	Vacant																																																																																																																																																																																																																																																																																																																																																												
	2	X1		2	Y9		2	X1		2	Y9																																																																																																																																																																																																																																																																																																																																																												
	3	24G		3	Vacant		3	24G		3	24G																																																																																																																																																																																																																																																																																																																																																												
	4	X0		4	Y8		4	X0		4	Y8																																																																																																																																																																																																																																																																																																																																																												
	5	Vacant		5	Vacant		5	Vacant		5	Vacant																																																																																																																																																																																																																																																																																																																																																												
X2 X3	1	+24V	YA YB	1	+24V	X2 X3	1	+24V	YA YB	1	Vacant																																																																																																																																																																																																																																																																																																																																																												
	2	X3		2	YB		2	X3		2	YB																																																																																																																																																																																																																																																																																																																																																												
	3	24G		3	Vacant		3	24G		3	24G																																																																																																																																																																																																																																																																																																																																																												
	4	X2		4	YA		4	X2		4	YA																																																																																																																																																																																																																																																																																																																																																												
	5	Vacant		5	Vacant		5	Vacant		5	Vacant																																																																																																																																																																																																																																																																																																																																																												
X4 X5	1	+24V	YC YD	1	+24V	X4 X5	1	+24V	YC YD	1	Vacant																																																																																																																																																																																																																																																																																																																																																												
	2	X5		2	YD		2	X5		2	YD																																																																																																																																																																																																																																																																																																																																																												
	3	24G		3	Vacant		3	24G		3	24G																																																																																																																																																																																																																																																																																																																																																												
	4	X4		4	YC		4	X4		4	YC																																																																																																																																																																																																																																																																																																																																																												
	5	Vacant		5	Vacant		5	Vacant		5	Vacant																																																																																																																																																																																																																																																																																																																																																												
X6 X7	1	+24V	YE YF	1	+24V	X6 X7	1	+24V	YE YF	1	Vacant																																																																																																																																																																																																																																																																																																																																																												
	2	X7		2	YF		2	X7		2	YF																																																																																																																																																																																																																																																																																																																																																												
	3	24G		3	Vacant		3	24G		3	24G																																																																																																																																																																																																																																																																																																																																																												
	4	X6		4	YE		4	X6		4	YE																																																																																																																																																																																																																																																																																																																																																												
	5	Vacant		5	Vacant		5	Vacant		5	Vacant																																																																																																																																																																																																																																																																																																																																																												

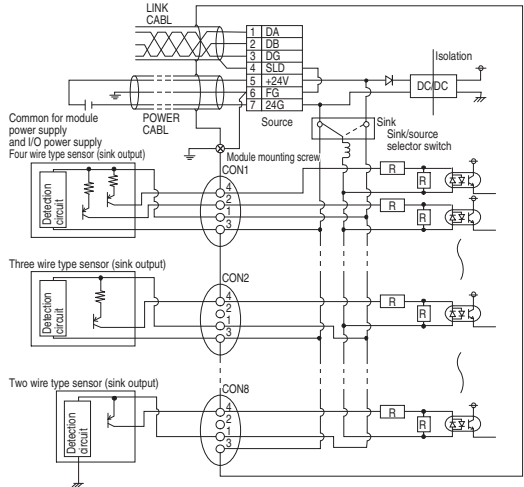
External Connections

AJ65SBTW4-16D

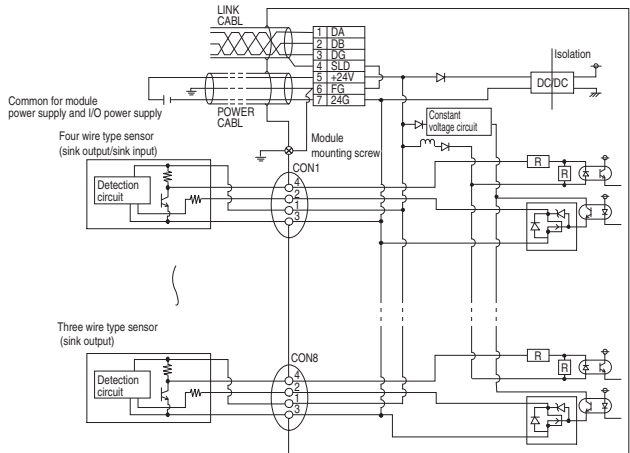
Sink input



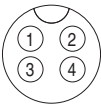
Source input



AJ65SBTW4-16DT



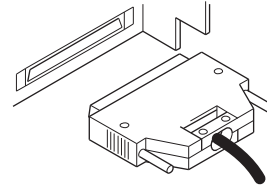
Pin layout



AJ65SBTW4-16D		AJ65SBTW4-16DT	
Pin No.	Signal name	Pin No.	Signal name
1	+24V	1	+24V
2	X8-XF	2	Y8-YF
3	24G	3	24G
4	X0-X7	4	X0-X7

## CC-Link Remote I/O: AJ65SBTCF□-□ • AJ65VBTCF□-□ • AJ65BTC□-□ FCN Connector Type

- All I/O wiring terminates in a single 40 pin connector.
- Connectors available separately to facilitate wiring harness construction.
- All models UL • cUL listed and CE certified.



• FCN connector



### Performance Specifications

Input Module Model Name	Input Type	Number of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time	External Connection Wire Type	Common Connection	Internal Current Consumption
					ON Voltage	OFF Voltage				
AJ65SBTCF1-32D	DC input (sink/source common type)	32 points	Photocoupler	24 VDC	14 V min.	6 V max.	1.5 ms max.	One wire type	32 points 1 common	45mA
AJ65BTC1-32D	DC input (sink, source type)	32 points	Photocoupler	24 VDC	14 V min.	6 V max.	10 ms max.	One wire type	32 points 1 common	70mA

Output Module Model Name	Output Type	Number of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Surge Suppression	Connection Wire Type	External Common Connection	Internal Current Consumption
					1 Point	1 Common	OFF—ON	ON—OFF				
AJ65SBTCF1-32T	Transistor output (sink type)	32 points	Photocoupler	12/24 VDC	0.1A	3.2A	0.5 ms max.	1.5 ms max.	Zener diode	One wire type	32 points 1 common	60mA
AJ65BTC1-32T	Transistor output (sink type)	32 points	Photocoupler	12/24 VDC	0.1A	2A	0.5 ms max.	2 ms max.	Clamp diode	One wire type	32 points 1 common	115mA

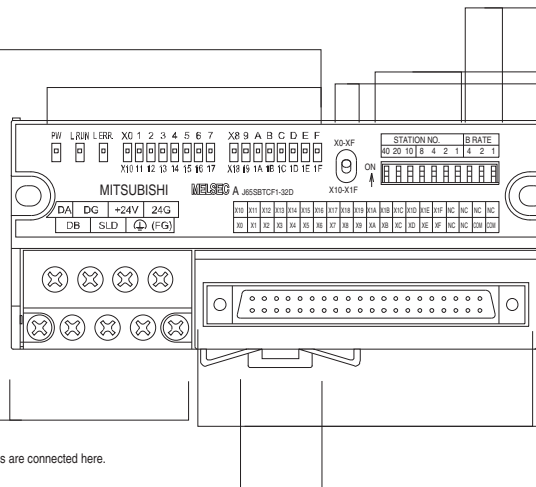
I/O Module Model Name	I/O Type		Number of I/O Points	Isolation Method	Rated Voltage		Input Response Time	Maximum Load Current		Operating Voltage		Output Response Time		Surge Suppression	External Connection Wire Type on Input /Output Sides	Common Connection	Internal Current Consumption
					Input	Load		1 Point	1 Common	ON Voltage	OFF Voltage	OFF—ON	ON—OFF				
AJ65SBTCF1-32DT	DC input / transistor output	Sink, source type / sink type	16 points /16 points	Photocoupler /photocoupler	24 VDC	12/24 VDC	1.5ms	0.1A	0.8A	14 V min.	6 V max.	0.5 ms max.	1.5 ms max.	Zener diode	One wire type	16 points 1 common /16 points 1 common	50mA
AJ65VBTCF1-32DT1	DC input / transistor output	Sink, source type / sink type	16 points /16 points	Photocoupler /photocoupler	24 VDC	12/24 VDC	0.2ms	0.1A	1.6A	15 V min.	3 V max.	0.5 ms max.	1.5 ms max.	Zener diode	One wire type	16 points 1 common /16 points 1 common	50mA

### Module Features

#### AJ65SBTCF1-32

##### Operation LED display

LED name	Item checked
PW	Turns on when the power supply to the remote I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. It flashes if the station-number and transmission-speed settings are changed while the communication is active.
X0 to 1F Y0 to 1F	Displays the on/off status of input. The LEDs turn on in the "On" state, and off in the "Off" state.



##### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

##### Station number setting switches

\*10, \*20, and \*40 in STATION NO. are used for setting the second digit of the station number.  
\*1, \*2, \*4, and \*8 in STATION NO. are used for setting the first digit of the station number.

##### Input/output display selector switch

##### Connector

Connector for input/output signals

##### DIN rail hook

Hook for mounting the module to the DIN rail

##### Terminal block

The compact remote I/O module power supply, transmission, and I/O signals are connected here.

## Module Features

### BCF-T1

#### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

#### Station number setting switches

"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.

"1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

#### One-touch connector for communication

#### One-touch connector for power supply and FG

#### Transmission speed

LED name	Item checked
PW	Turns on when the power supply to the remote I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. It flashes if the station-number and transmission-speed settings are changed while the communication is active.
X0 to F Y10 to 1F	Displays the on/off status of input. The LEDs turn on in the "On" state, and off in the "Off" state.

#### Input/output display selector switch

#### DIN rail hook

#### Connector

Connector for input/output signals

\* Side view shows connectors fitted.

### C-12

#### Operation LED display

LED name	Item checked
PW	Turns on when the power supply to the remote I/O module is turned on.
L RUN	Turns on when normal data is received from the master station, and turns off via timeout.
L ERR	Turns on in case of a transmission error (CRC error) and turns off via timeout (L RUN also turns off). It turns on if the settings for station number and transmission speed are wrong. It flashes if the station-number and transmission-speed settings are changed while the communication is active.
0 to F	Displays the on/off status of input. The LEDs turn on in the "On" state, and off in the "Off" state.

#### Transmission speed setting switch

Setting value	Transmission speed
0	156 kbps
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

#### Station number setting switches

"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.

"1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

#### Terminal block

The compact remote I/O module power supply, transmission, and I/O signals are connected here.

#### Connector

Connector for input/output signals

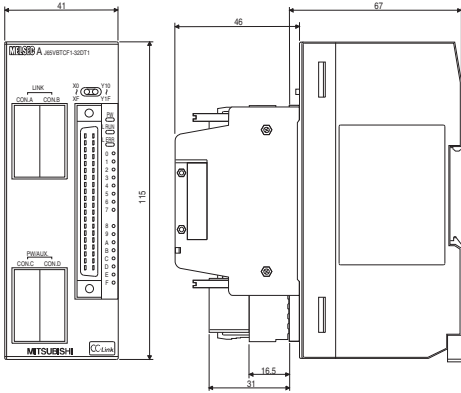
#### DIN rail hook

Hook for mounting the module to the DIN rail

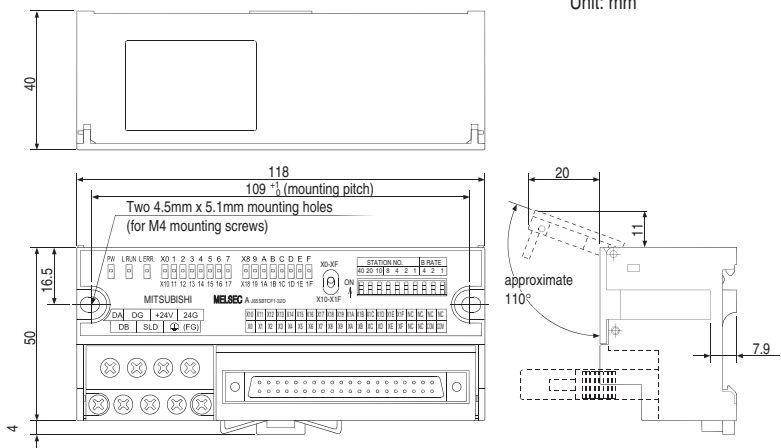
\* Side view shows connectors fitted.

# External Dimensions

AJ65VBTCF1-32□

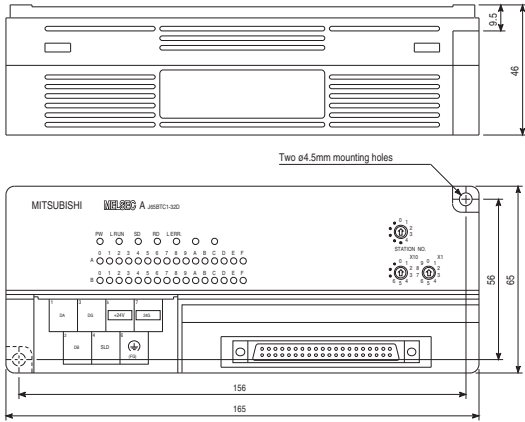


AJ65SBTCF1-32□



Unit: mm

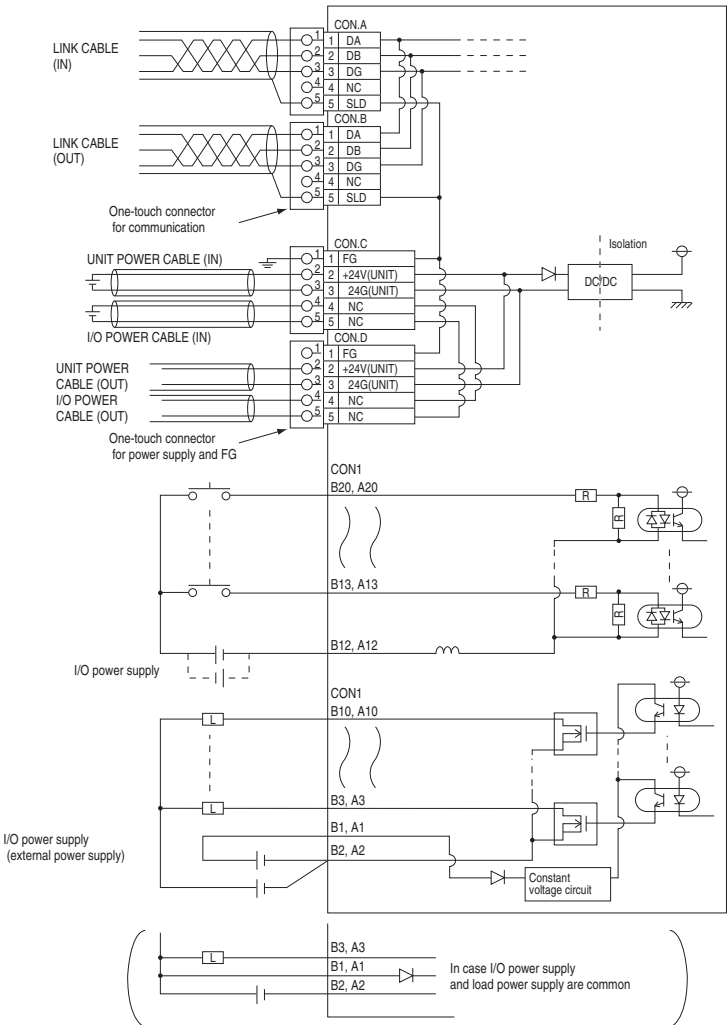
AJ65BTC1-32□



# External Connections

## Combination Input / Output Module

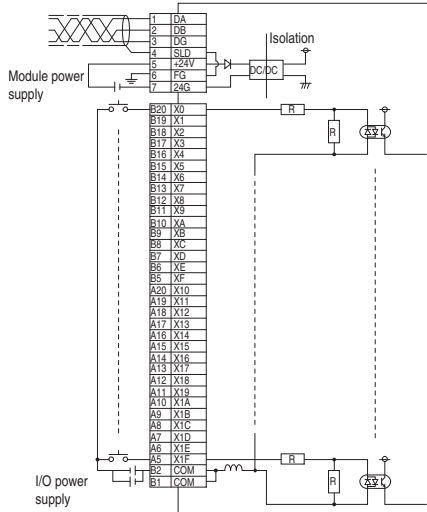
AJ65SBTCF1-32DT1



## External Connections

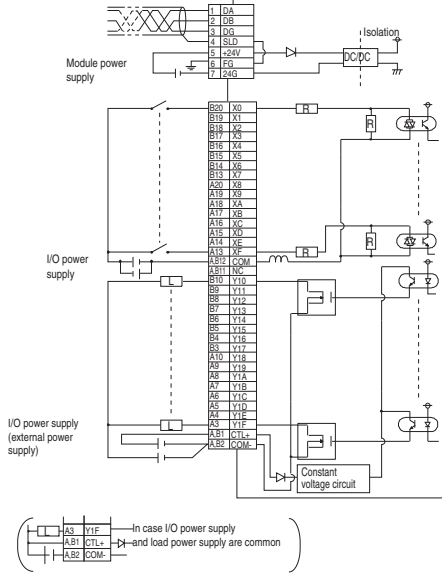
### Input Module

AJ65SBTCF1-32D type



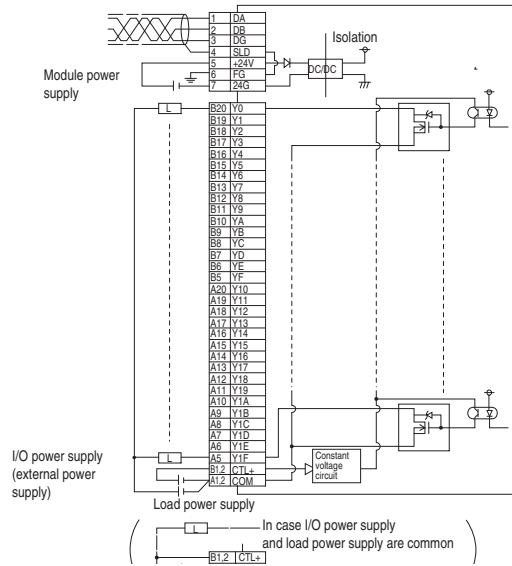
### Combination Input / Output Module

AJ65SBTCF1-32DT type



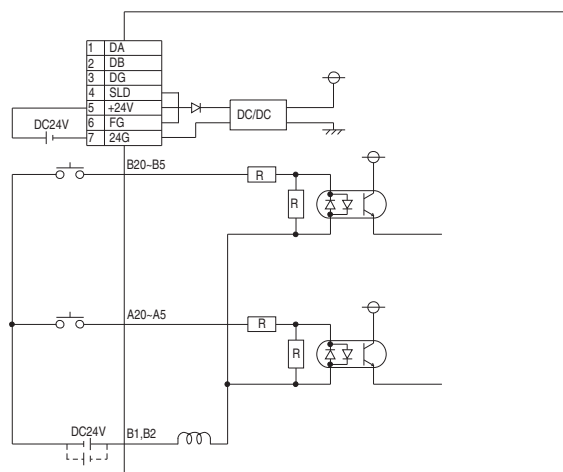
### Output Module

AJ65SBTCF1-32T type



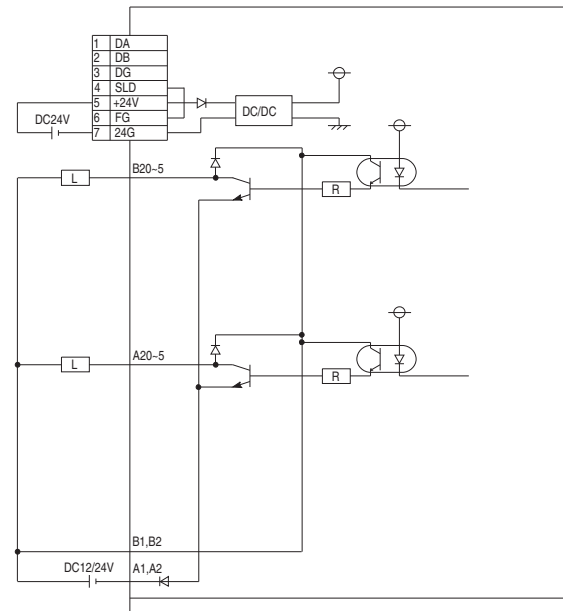
### Input Module

AJ65BTC1-32D type

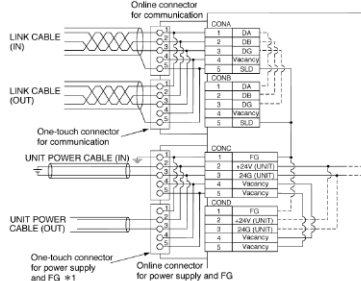


### Output Module

AJ65BTC1-32T type



<When using online connector>



\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

A module view from the top





# CC-Link Remote I/O: AJ65VBTSx-□□□ & AJ65VTCE□-□□□ Spring Clamp & e-CON Type

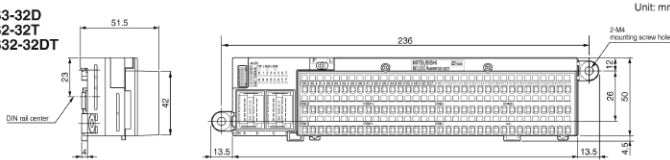
These I/O blocks enable cost savings through reduced labor & material costs. Spring clamps eliminate the need for wiring lugs and avoid the need for periodic retightening of I/O terminals. The e-CON terminals use the same I/O connection type as the existing CC-Link/LT I/O blocks. UL and cUL listing and CE certifications on most units.

## Performance Specifications

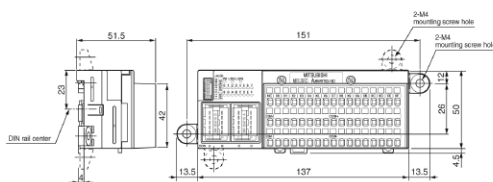
Input Module Model Name	Input Type		Number Of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Wire Gauge Size	Internal Current Consumption				
						On Voltage	Off Voltage	OFF-ON	ON-OFF								
AJ65VBTS3-16D	DC input	+COM	16	Photocoupler	24VDC	14VDC min	6VDC max	1.5ms max	1.5ms max	Three wire type	16 points 1 common	AWG 28 to 16	35mA				
AJ65VBTS3-32D	DC input	+COM	32	Photocoupler	24VDC	14VDC min	6VDC max	1.5ms max	1.5ms max	Three wire type	16 points 1 common	AWG 28 to 16	40mA				
Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Wire Gauge Size	Internal Current Consumption		
						1 Point	1 Common	OFF-ON	ON-OFF								
AJ65VBTS2-16T	Transistor	Sink	16	Photocoupler	12/24VDC	0.5A	4A	1ms max	1ms max	0.1mA max	Zener diode	Two wire type	16 points 1 common	AWG 28 to 16	45mA		
AJ65VBTS2-32T	Transistor	Sink	32	Photocoupler	12/24VDC	0.5A	4A	1ms max	1ms max	0.1mA max	Zener diode	Two wire type	16 points 1 common	AWG 28 to 16	60mA		
Combined I/O Module Model Name	I/O Type		Number of I/O Points	Isolation Method	Input/Load Voltage	Input Response Time	Maximum Output Load Current		Input Operating Voltage		Output Response Time		Leakage Current	Surge Suppression	Connection Wire Type On Input/Output Sides	Common Connection	Internal Current Consumption
							1 Point	1 Common	On Voltage	Off Voltage	OFF-ON	ON-OFF					
AJ65VBTS32-16DT	DC input/ transistor output	+COM/sink	8/8	Photocoupler/ photocoupler	24VDC/ 24VDC	1.5ms max	0.5A	4A	14VDC min	6VDC max	1ms max	1ms max	0.1mA max	Zener diode	Three wire type / Two wire type	16 points/ common	15mA
AJ65VBTS32-32DT	DC input/ transistor output	+COM/sink	16/16	Photocoupler/ photocoupler	24VDC/ 24VDC or 12VDC	1.5ms max	0.5A	4A	14VDC min	6VDC max	1ms max	1ms max	0.1mA max	Zener diode	Three wire type / Two wire type	16 points/ common	50mA
Input Module Model Name	Input Type		Number Of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Internal Current Consumption					
						On Voltage	Off Voltage	OFF-ON	ON-OFF								
AJ65VBTCES3-8D	DC input	+COM	8	Photocoupler	24VDC	14VDC min	6VDC max	1.5ms max	1.5ms max	Three wire type	8 points 1 common	35mA					
AJ65VBTCES3-16D	DC input	+COM	16	Photocoupler	24VDC	14VDC min	6VDC max	1.5ms max	1.5ms max	Three wire type	16 points 1 common	35mA					
Output Module Model Name	Output Type		Number Of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption			
						1 Point	1 Common	OFF-ON	ON-OFF								
AJ65VBTCES2-8T	Transistor	Sink	8	Photocoupler	12/24VDC	0.1A	0.8A	1ms max	1ms max	0.1mA max	Zener diode	Two wire type	8 points 1 common	35mA			
Combined I/O Module Model Name	I/O Type		Number Of I/O Points	Isolation Method	Input/Load Voltage	Input Response Time	Maximum Output Load Current		Input Operating Voltage		Output Response Time		Leakage Current	Surge Suppression	Connection Wire Type on Input/Output Sides	Common Connection	Internal Current Consumption
							1 Point	1 Common	On Voltage	Off Voltage	OFF-ON	ON-OFF					
AJ65VBTCES32-16DT	DC input/ transistor output	+COM/sink	8/8	Photocoupler/ photocoupler	24VDC/ 24VDC	1.5ms max	0.1A	0.8A	14VDC min	6VDC max	1ms max	1ms max	0.1mA max	Zener diode	Three wire type / Two wire type	16 points/ common	40mA

## External Dimensions

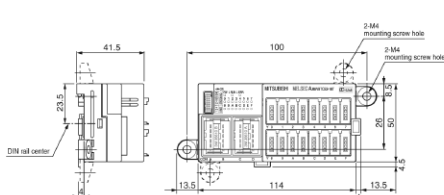
AJ65VBTS3-32D  
AJ65VBTS2-32T  
AJ65VBTS32-32DT



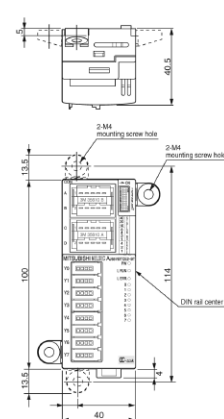
AJ65VBTS3-16D  
AJ65VBTS2-16T  
AJ65VBTS32-16DT



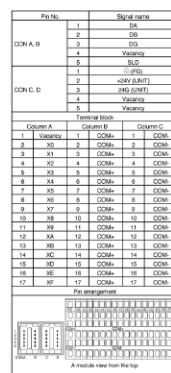
AJ65VTCE3-16D  
AJ65VTCE32-16DT



AJ65VTCE3-8D  
AJ65VTCE2-8T



**Input Module**  
**AJ65VBTS3-16D**

[illegible]

\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG

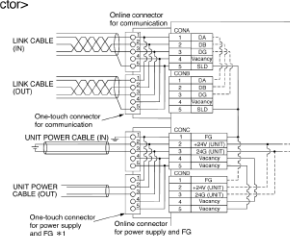
	Pin No.	Signal name	
CON A, B	1	DA	
	2	DB	
	3	VG	
	4	Vacancy	
CON C, D	5	SLD	
	1	Ⓜ (FG)	
	2	24V (UNIT)	
	3	24V (UNIT)	
	4	Vacancy	
5	Vacancy		
Terminal block			
Column A		Column B	Column C
1	Vacancy	1	COM1
2	X0	2	COM1+
3	X1	3	COM1+
4	X2	4	COM1+
5	X3	5	COM1+
6	X4	6	COM1+
7	X5	7	COM1+
8	X6	8	COM1+
9	X7	9	COM1+
10	X8	10	COM1+
11	X9	11	COM1+
12	XA	12	COM1+
13	XB	13	COM1+
14	XC	14	COM1+
15	XD	15	COM1+
16	XE	16	COM1+
17	XF	17	COM1+
18	Vacancy	18	COM2
19	X10	19	COM2
20	X11	20	COM2
21	X12	21	COM2
22	X13	22	COM2
23	X14	23	COM2
24	X15	24	COM2
25	X16	25	COM2
26	X17	26	COM2
27	X18	27	COM2
28	X19	28	COM2
29	X1A	29	COM2
30	X1B	30	COM2
31	X1C	31	COM2
32	X1D	32	COM2
33	X1E	33	COM2
34			

A module view from the top



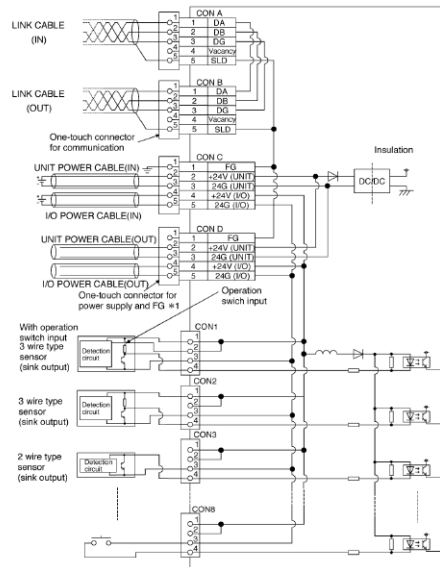
\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

<When using online connector>

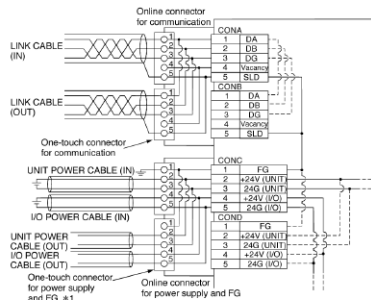


\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

## Input Module AJ65VBTCE3-8D



<When using online connector>



\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

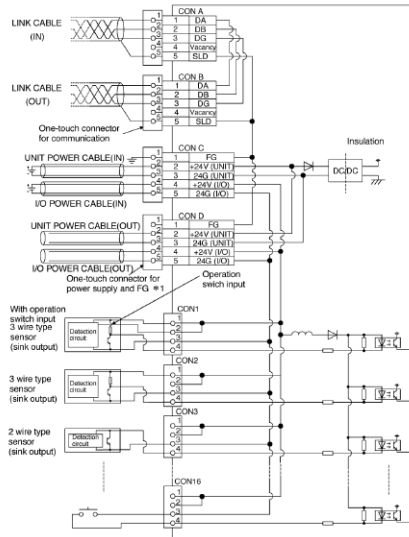
Pin No.	Signal name
1	DA
2	DB
3	DG
4	Vacancy
5	SLD
1	(FG)
2	+24V (UNIT)
3	24G (UNIT)
4	+24V (I/O)
5	24G (I/O)

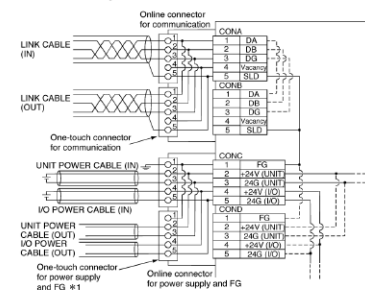
Pin No.	Signal name	Pin arrangement
CON1 (X0)	1 +24V	5 4 3 2 1
	2 +V	
	3 24G	
	4 X0	
CON2 (X1)	1 +24V	
	2 +V	
	3 24G	
	4 X1	
CON3 (X2)	1 +24V	
	2 +V	
	3 24G	
	4 X2	
CON4 (X3)	1 +24V	
	2 +V	
	3 24G	
	4 X3	
CON5 (X4)	1 +24V	
	2 +V	
	3 24G	
	4 X4	
CON6 (X5)	1 +24V	
	2 +V	
	3 24G	
	4 X5	
CON7 (X6)	1 +24V	
	2 +V	
	3 24G	
	4 X6	
CON8 (X7)	1 +24V	
	2 +V	
	3 24G	
	4 X7	

A module view from the top

## Input Module AJ65VBTCE3-16D



<When using online connector>



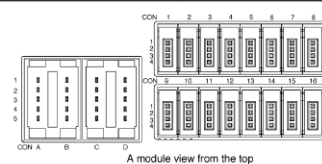
\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

Pin No.	Signal name
1	DA
2	DB
3	DG
4	Vacancy
5	SLD
1	(FG)
2	+24V (UNIT)
3	24G (UNIT)
4	+24V (I/O)
5	24G (I/O)

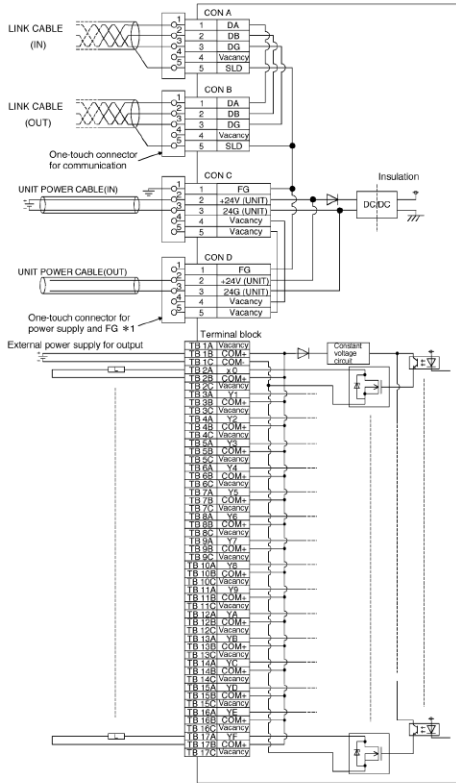
Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
CON 1	1 +24V	CON 1	1 +24V	CON 1	1 +24V	CON 1	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X0	4	X0	4	X0	4	X0
CON 2	1 +24V	CON 2	1 +24V	CON 2	1 +24V	CON 2	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X1	4	X1	4	X1	4	X1
CON 3	1 +24V	CON 3	1 +24V	CON 3	1 +24V	CON 3	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X2	4	X2	4	X2	4	X2
CON 4	1 +24V	CON 4	1 +24V	CON 4	1 +24V	CON 4	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X3	4	X3	4	X3	4	X3
CON 5	1 +24V	CON 5	1 +24V	CON 5	1 +24V	CON 5	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X4	4	X4	4	X4	4	X4
CON 6	1 +24V	CON 6	1 +24V	CON 6	1 +24V	CON 6	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X5	4	X5	4	X5	4	X5
CON 7	1 +24V	CON 7	1 +24V	CON 7	1 +24V	CON 7	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X6	4	X6	4	X6	4	X6
CON 8	1 +24V	CON 8	1 +24V	CON 8	1 +24V	CON 8	1 +24V
2	+V	2	+V	2	+V	2	+V
3	24G	3	24G	3	24G	3	24G
4	X7	4	X7	4	X7	4	X7

Pin arrangement



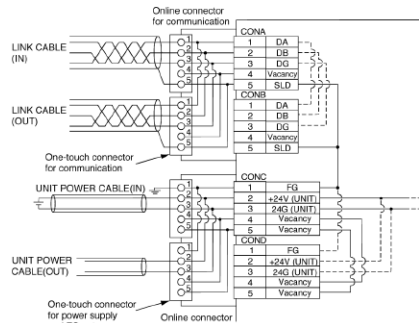
A module view from the top

## Output Module AJ65VBTS2-16T

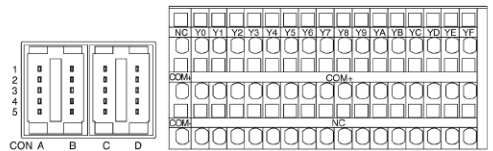


Pin No.		Signal name			
CON A, B	1	DA			
	2	DB			
	3	DG			
	4	Vacancy			
	5	SLD			
CON C, D	1	⊕ (FG)			
	2	+24V (UNIT)			
	3	24G (UNIT)			
	4	Vacancy			
	5	Vacancy			
Terminal block					
Column A		Column B		Column C	
1	Vacancy	1	COM+	1	COM-
2	Y0	2	COM+	2	Vacancy
3	Y1	3	COM+	3	Vacancy
4	Y2	4	COM+	4	Vacancy
5	Y3	5	COM+	5	Vacancy
6	Y4	6	COM+	6	Vacancy
7	Y5	7	COM+	7	Vacancy
8	Y6	8	COM+	8	Vacancy
9	Y7	9	COM+	9	Vacancy
10	Y8	10	COM+	10	Vacancy
11	Y9	11	COM+	11	Vacancy
12	YA	12	COM+	12	Vacancy
13	YB	13	COM+	13	Vacancy
14	YC	14	COM+	14	Vacancy
15	YD	15	COM+	15	Vacancy
16	YE	16	COM+	16	Vacancy
17	YF	17	COM+	17	Vacancy

<When using online connector>

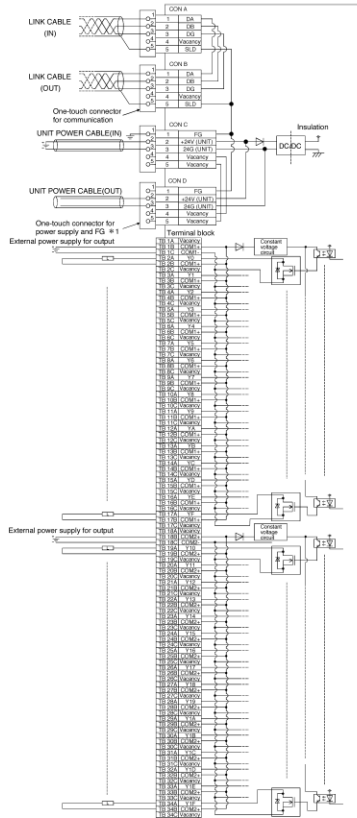


\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.



A module view from the top

## Output Module AJ65VBTS2-32T

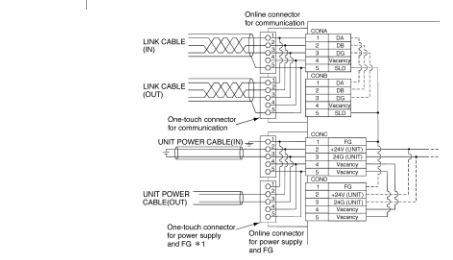


	Pin No.	Signal name			
		1	2		
CON A, B	1	DA			
	2	DB			
	3	DG			
	4	Vacancy			
	5	SLD			
CON C, D	1	(FG)			
	2	+24V (UNIT)			
	3	24G (UNIT)			
	4	Vacancy			
	5	Vacancy			
Terminal block					
Column A	Column B	Column C			
1	Vacancy	1	COM1+	1	COM1-
2	Y0	2	COM1+	2	Vacancy
3	Y1	3	COM1+	3	Vacancy
4	Y2	4	COM1+	4	Vacancy
5	Y3	5	COM1+	5	Vacancy
6	Y4	6	COM1+	6	Vacancy
7	Y5	7	COM1+	7	Vacancy
8	Y6	8	COM1+	8	Vacancy
9	Y7	9	COM1+	9	Vacancy
10	Y8	10	COM1+	10	Vacancy
11	Y9	11	COM1+	11	Vacancy
12	YA	12	COM1+	12	Vacancy
13	YB	13	COM1+	13	Vacancy
14	YC	14	COM1+	14	Vacancy
15	YD	15	COM1+	15	Vacancy
16	YE	16	COM1+	16	Vacancy
17	YF	17	COM1+	17	Vacancy
18	Vacancy	18	COM2+	18	COM2-
19	Y10	19	COM2+	19	Vacancy
20	Y11	20	COM2+	20	Vacancy
21	Y12	21	COM2+	21	Vacancy
22	Y13	22	COM2+	22	Vacancy
23	Y14	23	COM2+	23	Vacancy
24	Y15	24	COM2+	24	Vacancy
25	Y16	25	COM2+	25	Vacancy
26	Y17	26	COM2+	26	Vacancy
27	Y18	27	COM2+	27	Vacancy
28	Y19	28	COM2+	28	Vacancy
29	Y1A	29	COM2+	29	Vacancy
30	Y1B	30	COM2+	30	Vacancy
31	Y1C	31	COM2+	31	Vacancy
32	Y1D	32	COM2+	32	Vacancy
33	Y1E	33	COM2+	33	Vacancy
34	Y1F	34	COM2+	34	Vacancy



A module view from the top

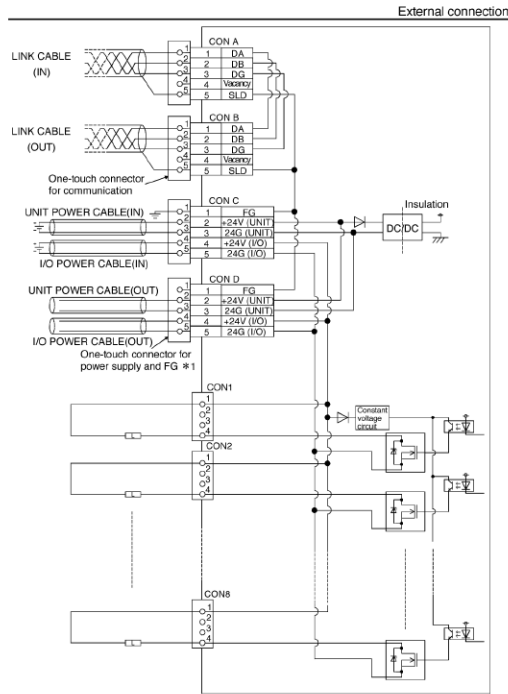
<When using online connector>



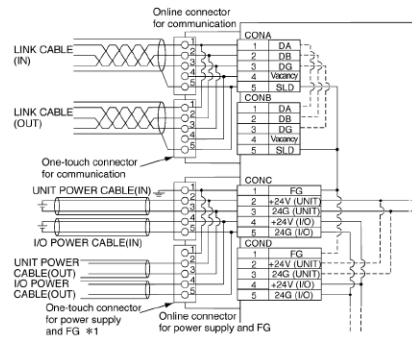
\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

## Output Module AJ65VBTCE2-8T



### < When using online connector >



\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

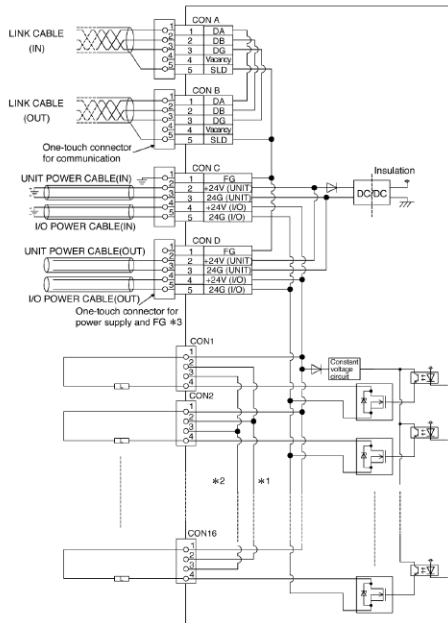
Pin No.	Signal name	Pin arrangement
1	DA	1
2	DB	2
3	DG	3
4	Vacancy	4
5	SLD	5
1	⊕ FG	1
2	+24V (UNIT)	2
3	24G (UNIT)	3
4	+24V (I/O)	4
5	24G (I/O)	5

Pin No.	Signal name	Pin arrangement
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y0	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y1	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y2	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y3	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y4	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y5	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y6	4
1	+24V	1
2	Vacancy	2
3	Vacancy	3
4	Y7	4

A module view from the top

## Output Module AJ65VBTCE2-16T

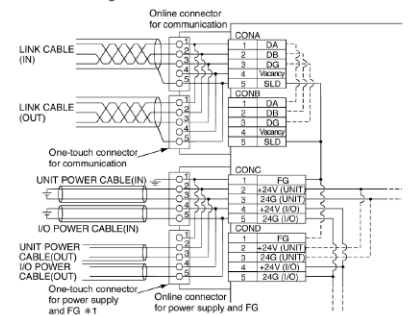


Pin No.	Signal name
1	DA
2	DB
3	DG
4	Vacancy
5	SLD
1	⊕ (FG)
2	+24V (UNIT)
3	24G (UNIT)
4	Vacancy
5	Vacancy

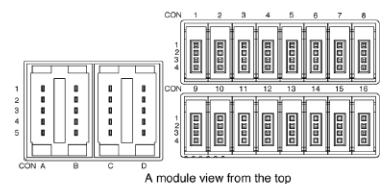
  

Column A	Column B	Column C
1 Vacancy	1 COM+	1 COM-
2 Y0	2 COM+	2 Vacancy
3 Y1	3 COM+	3 Vacancy
4 Y2	4 COM+	4 Vacancy
5 Y3	5 COM+	5 Vacancy
6 Y4	6 COM+	6 Vacancy
7 Y5	7 COM+	7 Vacancy
8 Y6	8 COM+	8 Vacancy
9 Y7	9 COM+	9 Vacancy
10 Y8	10 COM+	10 Vacancy
11 Y9	11 COM+	11 Vacancy
12 YA	12 COM+	12 Vacancy
13 YB	13 COM+	13 Vacancy
14 YC	14 COM+	14 Vacancy
15 YD	15 COM+	15 Vacancy
16 YE	16 COM+	16 Vacancy
17 YF	17 COM+	17 Vacancy

### < When using online connector >

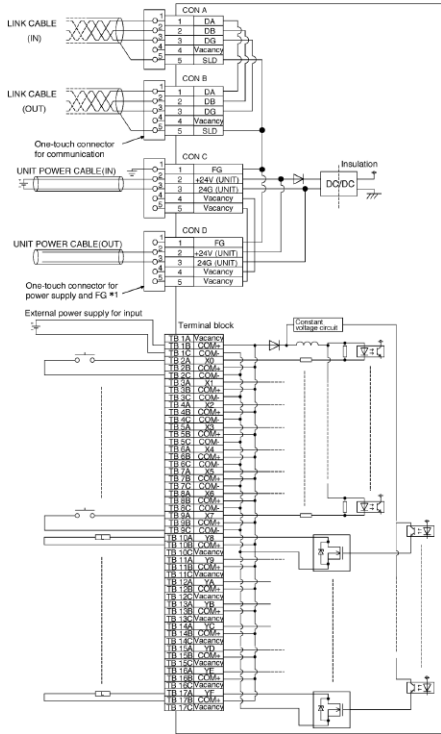


- \* 1: No.2 pins of CON1 to 16 are internally connected and unusable.
- \* 2: No.3 pins of CON1 to 16 are internally connected and unusable.
- \* 3: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

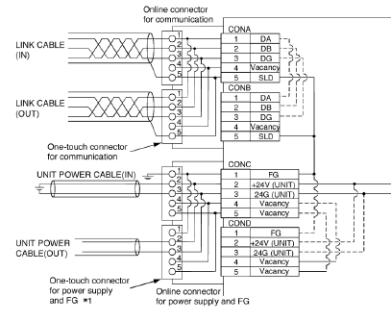




## Combination Input/Output Module AJ65VBTS32-16DT



<When using online connector>

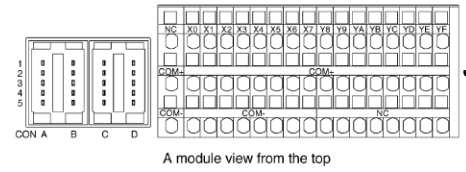


\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

Pin No.	Signal name
1	DA
2	DB
3	DG
4	Vacancy
5	SLD
1	FG
2	+24V (UNIT)
3	24G (UNIT)
4	Vacancy
5	Vacancy

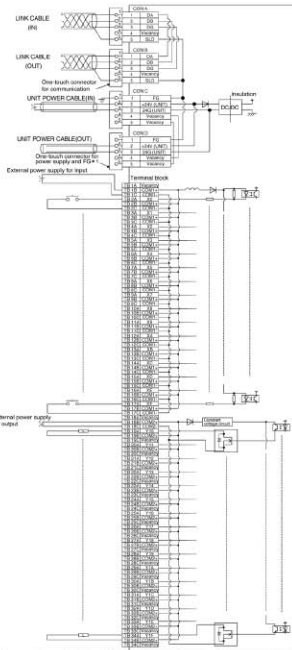
  

Column A	Column B	Column C
1 Vacancy	1 COM+	1 COM-
2 X0	2 COM+	2 COM-
3 X1	3 COM+	3 COM-
4 X2	4 COM+	4 COM-
5 X3	5 COM+	5 COM-
6 X4	6 COM+	6 COM-
7 X5	7 COM+	7 COM-
8 X6	8 COM+	8 COM-
9 X7	9 COM+	9 COM-
10 Y8	10 COM+	10 Vacancy
11 Y9	11 COM+	11 Vacancy
12 YA	12 COM+	12 Vacancy
13 YB	13 COM+	13 Vacancy
14 YC	14 COM+	14 Vacancy
15 YD	15 COM+	15 Vacancy
16 YE	16 COM+	16 Vacancy
17 YF	17 COM+	17 Vacancy



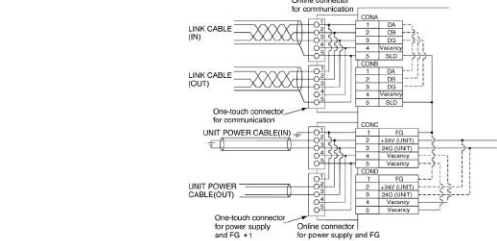
A module view from the top

## Combination Input/Output Module AJ65VBTS32-32DT



\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

<When using online connector>



\* 1: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

Pin No.	Signal name
1	DA
2	DB
3	DG
4	Vacancy
5	SLD
1	FG
2	+24V (UNIT)
3	24G (UNIT)
4	Vacancy
5	Vacancy

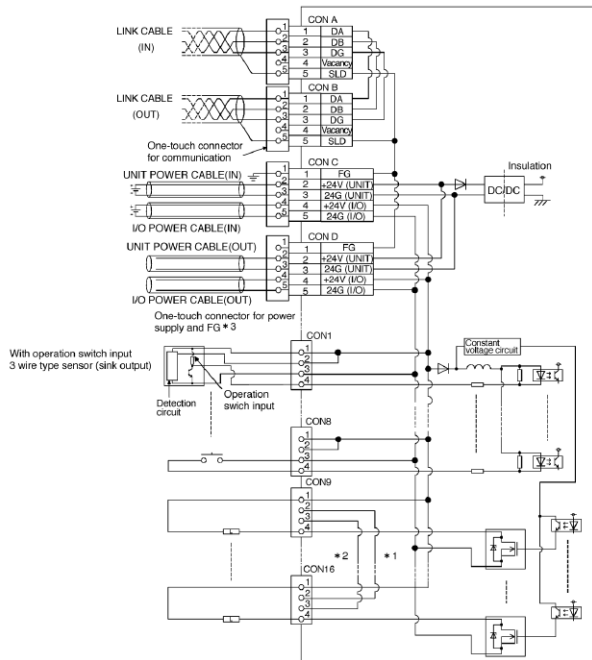
  

Column A	Column B	Column C
1 Vacancy	1 COM+	1 COM-
2 X0	2 COM+	2 COM-
3 X1	3 COM+	3 COM-
4 X2	4 COM+	4 COM-
5 X3	5 COM+	5 COM-
6 X4	6 COM+	6 COM-
7 X5	7 COM+	7 COM-
8 X6	8 COM+	8 COM-
9 X7	9 COM+	9 COM-
10 X8	10 COM+	10 COM-
11 X9	11 COM+	11 COM-
12 XA	12 COM+	12 COM-
13 XB	13 COM+	13 COM-
14 XC	14 COM+	14 COM-
15 XD	15 COM+	15 COM-
16 XE	16 COM+	16 COM-
17 XF	17 COM+	17 COM-
18 Vacancy	18 COM2+	18 COM2-
19 Y10	19 COM2+	19 Vacancy
20 Y11	20 COM2+	20 Vacancy
21 Y12	21 COM2+	21 Vacancy
22 Y13	22 COM2+	22 Vacancy
23 Y14	23 COM2+	23 Vacancy
24 Y15	24 COM2+	24 Vacancy
25 Y16	25 COM2+	25 Vacancy
26 Y17	26 COM2+	26 Vacancy
27 Y18	27 COM2+	27 Vacancy
28 Y19	28 COM2+	28 Vacancy
29 Y1A	29 COM2+	29 Vacancy
30 Y1B	30 COM2+	30 Vacancy
31 Y1C	31 COM2+	31 Vacancy
32 Y1D	32 COM2+	32 Vacancy
33 Y1E	33 COM2+	33 Vacancy
34 Y1F	34 COM2+	34 Vacancy

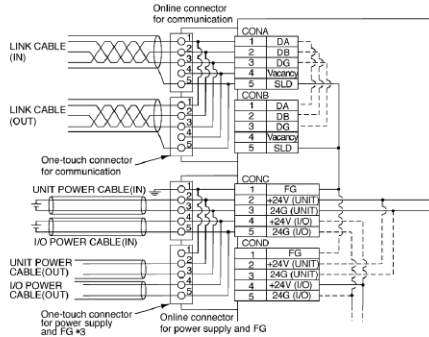


A module view from the top

Combination Input/Output Module  
AJ65VBTCE32-16DT

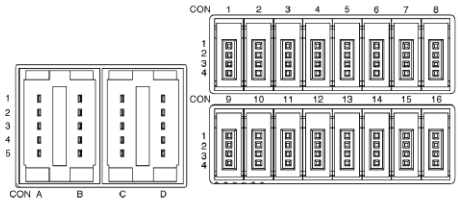


< When using online connector >



- \* 1: No.2 pins of CON9 to 16 are internally connected and unusable.
- \* 2: No.3 pins of CON9 to 16 are internally connected and unusable.
- \* 3: The connector in non-divided line should be installed to empty of connector for the power supply and FG.

Pin No.		Signal name	
CON A,B	1	DA	
	2	DB	
	3	DG	
	4	Vacancy	
	5	SLD	
CON C,D	1	⊖ (FG)	
	2	+24V (UNIT)	
	3	24G (UNIT)	
	4	+24V (IO)	
	5	24G (IO)	
Pin No.		Signal name	
CON1 (X0)	1	+24V	
	2	+V	
	3	24G	
	4	X0	
CON2 (X1)	1	+24V	
	2	+V	
	3	24G	
	4	X1	
CON3 (X2)	1	+24V	
	2	+V	
	3	24G	
	4	X2	
CON4 (X3)	1	+24V	
	2	+V	
	3	24G	
	4	X3	
CON5 (X4)	1	+24V	
	2	+V	
	3	24G	
	4	X4	
CON6 (X5)	1	+24V	
	2	+V	
	3	24G	
	4	X5	
CON7 (X6)	1	+24V	
	2	+V	
	3	24G	
	4	X6	
CON8 (X7)	1	+24V	
	2	+V	
	3	24G	
	4	X7	
CON9 (Y8)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	Y8	
CON10 (Y9)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	Y9	
CON11 (YA)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	YA	
CON12 (YB)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	YB	
CON13 (YC)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	YC	
CON14 (YD)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	YD	
CON15 (YE)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	YE	
CON16 (YF)	1	+24V	
	2	Vacancy * 1	
	3	Vacancy * 2	
	4	YF	



A module view from the top

## CC-Link Analog Modules: AJ65VBTCU-68ADV • AJ65VBTCU-68ADIN

### FCN Connector Type

- Compatible with CC-Link Version V2.0.
- Eight analog channels occupy only one station, instead of three with CC-Link V1.10.
- High precision analog to digital conversion.
- Switchable input ranges for each channel.
- Sampling or averaging processing.
- One touch connectors reduce installation time and cost (available separately).
- Module can be replaced without disrupting the network (when "on line" network connector is used.)
- All models UL and cUL listed and CE certified.



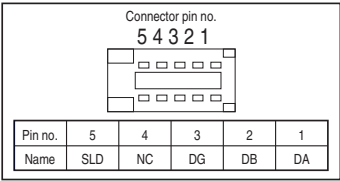
## Performance Specifications

Model Name		AJ65VBTCU-68ADV		AJ65VBTCU-68ADIN					
Analog Input	Voltage	-10 to +10 VDC (input resistance 1 m )		—					
	Current	—		0 to 20 mA DC (input resistance 250 )					
Digital Value		12-bit + sign (-4096 to +4095)		12 bit + sign (-4096 to +4095)					
Input/Output Characteristics *Accuracy (Accuracy Relative to the Maximum Digital Output Value)			Analog input range		Digital value	Accuracy		Maximum resolution	
			AJ65VBTCU-68ADV Voltage	-10 to +10V	-4000 to +4000	± 0.3% (± 12digit °)	Ambient temperature 0 to 55 °C		Ambient temperature 25 ± 5 °C
				User range setting 1 (-10 to +10 V)					
				0 to 5 V					
				1 to 5 V					
				User range setting 2 (-10 to +10 V)					
				0 to 20 mA					
			AJ65VBTCU-68ADI Current	4 to 20 mA	0 to 4000				
				User range setting (0 to 20 mA)					
Input Range Switching		For each channel							
Offset/Gain Setting		Yes							
Maximum Conversion Speed		1 ms/channel							
Absolute Maximum Input		Voltage: ±15 V			Voltage: ±30 mA				
Number of Analog Input Points		8 channels/module							
Station Type		Remote device station							
Number of Occupied Stations, Expanded Cyclic Setting		Ver. 1 mode: 3 stations (RWr/RWw 12 words each, RS/Ry 32 points) Ver. 2 mode: 1 station (extended word (RWr/RWw) 16 words each, RX/Ry 32 points), Quadruple							
CC-Link-Compatible Function		Cyclic transmission, extended cyclic transmission, station-to-station cable length relaxation							
Withstand Voltage		Between batch of power supply/communication systems and batch of analog inputs: 500 VAC for one minute							
Isolation Method		Between communication system and batch of analog inputs: Photocoupler isolation / Between power supply system and batch of analog inputs: Photocoupler isolation Between channels: No isolation / Communication interface: No isolation							
External Connection Method		One-touch connector for communication [transmission circuit] (5-pin/solderless type. The connector plug is sold separately.) One-touch connector for power supply and FG [module power supply and FG] (5-pin/solderless type. The connector plug is sold separately.) One-touch connector for analog input (4-pin/solderless type. The connector plug is sold separately.) (Optional parts) Online connector for communication: A6CON-LJ5P, online connector for power supply: A6CON-PWJ5P							
Applicable Wire Size	One-Touch Connector for Communication	Communication line: CC-Link dedicated cable compatible with Ver.1.10, 0.5 mm <sup>2</sup> (AWG20) [ø2.2 to 3.3 mm] Shielded power supply 0.5 mm <sup>2</sup> (AWG20)							
	One-touch Connector for Power Supply	0.66 to 0.98 mm <sup>2</sup> (AWG18) [ø2.2 to 3.0 mm], wire size 0.08 mm <sup>2</sup> or more							
	One-Touch Connector for Analog I/O	ø1.0 to 1.4 mm (A6CON-P214), ø1.4 to 2.0 mm (A6CON-P220), [applicable wire size: 0.14 to 0.2 mm <sup>2</sup> ] ø1.0 to 1.4 mm (A6CON-P514), ø1.4 to 2.0 mm (A6CON-P520), [applicable wire size: 0.3 to 0.3 mm <sup>2</sup> ]							
Module Mounting Screws or Applicable Metal Fittings		A6PLT-J65VI							
Applicable DIN Rail		TH35-7.5Fe, TH35-7.5Al (compliant to JIS C 2812)							
External Power Supply		24 VDC(20.4 to 26.4 VDC with a ripple rate of 5% or less)							
Inrush Current		4.2 A, 1.2 ms max.							
Internal Current Consumption (24 VDC)		0.10A							
Weight		0.17kg							
External Dimensions		41(W) x 115(H) x 67(D)							

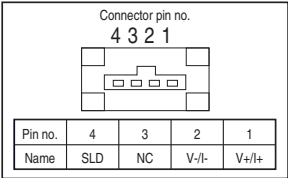


Module Features

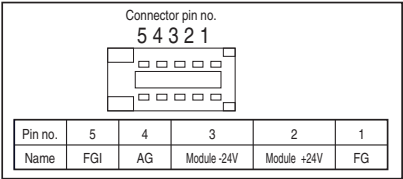
Connector for communication



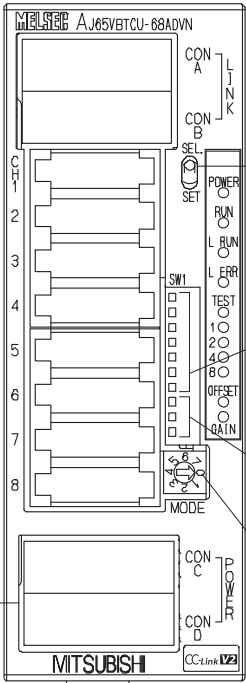
Connector for analog I/O



Connector for power supply



For a detailed description of the connectors, see introduction to CC-Link section



SELECT/SET switch

Operating condition LED display

Description	
POWER	On: When the power supply is turned
	Normal mode
RUN	On: Normal operation
	On: When the SELECT/SET switch is in the SET position
L RUN	On: When the communication is normal
	Off: When the communication is normal
L ERR.	On: When the SELECT/SET switch is in the SELECT or central position
	Off: When the communication is normal

LED display for offset/gain adjustment

Transmission speed setting switch

Setting value	Transmission speed
0	156kbps
1	625kbps
2	2.5Mbps
3	5.0Mbps
4	10Mbps

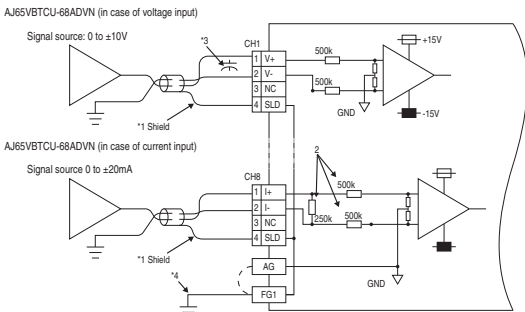
Station number setting switch

\*10, \*20, and \*40 in STATION NO. are used for setting the second digit of the station number.  
\*1, \*2, \*4, and \*8 in STATION NO. are used for setting the first digit of the station number.

Mode selector switch

Description			
AJ65VBTCTU-68ADVN/68ADIN		AJ65UBTCU-68AIN	
Ver.1 mode	Ver.2 mode	Ver.1 mode	Ver.2 mode
0: Normal mode	3: Normal mode	0: Normal mode	3: Normal mode
1: Test mode (user range setting 1)	4: Test mode (user range setting 1)	1: Test mode (user range setting 1)	4: Test mode (user range setting 1)
2: Test mode (user range setting 2)	5: Test mode (user range setting 2)		2.5~7: Not used
	6 to 7: Not used		

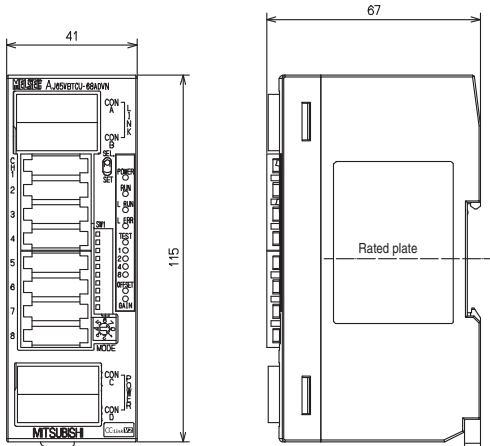
External Connections



- \*1 For wire, use two-core shielded twisted-pair cable.
- \*2 Note the input resistance of AJ65VBTCTU-68ADI.
- \*3 Connect a capacitor of around 0.1 to 0.47  $\mu$ F (it must be a product that can withstand voltages of 25 V or more) between the V and COM terminals if noise or ripple is generated in the external wiring.
- \*4 Be sure to ground FGI. There are cases where AG should also be grounded if the signal is particularly noisy. The offset or gain value should be set again if the ground wiring is changed after setting the offset or gain value (whether the signals were connected to ground or not).

External Dimensions

Unit: mm



## CC-Link Analog Modules: AJ65SBT-64AD • AJ65BT-64AD Analog to Digital Converter Modules

### AJ65SBT-64AD Analog Input

- Four channels (voltage input / current input).
- Switchable input ranges.
- Handles analog ranges  $\pm 10$  VDC and 0 ~ 20mA.
- Compact size.
- Perform channel averaging without affecting conversion speed.
- Certification: UL • cUL • CE

### AJ65BT-64AD Analog Input

- Four channels (voltage input / current input).
- Handles analog ranges  $\pm 10$  VDC and 0 ~ 20mA.
- Certification: UL • cUL • CE



## Performance Specifications

Model Name		AJ65SBT-64AD					AJ65BT-64AD				
Analog Input	Voltage	-10 to +10 VDC (input resistance 1M )					-10 to +10 VDC (input resistance 1M )				
	Current	0 to 20 mA DC (input resistance 250 )					-20 to +20 mA DC (input resistance 250 )				
Digital Value		12 bit + sign (-4096 to +4095)					12 bit or 11 bit + sign (0 to 4000, or -2000 to +2000)				
Input/Output Characteristics *Accuracy (Accuracy Relative to the Maximum Digital Output Value)	Analog input range		Digital value	Maximum resolution	Accuracy		Analog input range		Digital value	Maximum resolution	Accuracy
	Voltage	-10 to +10 V	-4000 to +4000	2.5mV	±0.4% (±16 digit <sup>*</sup> )	±0.2% (±8 digit <sup>*</sup> )	Voltage/current	-10 to +10 V	0 to +4000,or -2000 to +2000	5mV	±1% (±40 digit <sup>*</sup> )
		-10 to +10 V (user range setting 1)		0 to +10 V				2.5mV			
		0 to 5 V		0 to 5 V				1.25mV			
		1 to 5 V		1 to 5 V				1mV			
	Current	0 to +5 V (user range setting 2)	0 to 4000	1.25mV			-20 to 20 mA	20μA			
		0 to 20mA		0 to 20mA			10μA				
		4 to 20mA		0 to 20mA			5μA				
		0 to +20 mA (user range setting 3)		4 to 20mA			-2000 to +2000	4μA			

Input Range Switching	For each channel					All channels in the batch				
Offset/Gain Setting	Yes									
Maximum Conversion Speed	1 ms/channel									
Absolute Maximum Input	Voltage: ±15 V, current: ±30 mA									
Number of Analog Input Points	4 channels/module									
Station Type	Remote device station									
Number of Occupied Stations	1 station (32 points each for RX/R <sub>Y</sub> , 4 words each for R <sub>Wr</sub> /R <sub>Ww</sub> )					2 stations (32 points each for RX/R <sub>Y</sub> , 8 words each for R <sub>Wr</sub> /R <sub>Ww</sub> )				
Withstand Voltage	Between batch of power supply/communication systems and batch of analog inputs: 500 VAC for one minute									
Isolation Method	Between power supply system and batch of analog inputs: Photocoupler isolation/Between communication system and batch of analog inputs: Photocoupler isolation/Between channels: No isolation									
External Connection Method	7-point 2-piece terminal block (transmission, power supply), directly mounted 18-point terminal block (analog output area)					27-point terminal block (M3.5)				
Applicable Wire Size	0.3 to 0.75 mm <sup>2</sup>					0.75 to 2.00 mm <sup>2</sup>				
Module Mounting Screws	M4 x 0.7 mm x 16 mm or more, possible to mount on a DIN rail									
Applicable DIN Rail	TH35-7.5Fe, TH35-7.5Al (compliant to JIS C 2812)					TH35-7.5Fe, TH35-7.5Al, TH35-15Fe (compliant to JIS C 2812)				
Applicable Solderless Terminal	RAV1.25 to 3.5 (compliant to JIS C 2805)					RAV1.25 to 3.5, RAV2 to 3.5				
Internal Current Consump. (24 VDC)	0.09A					0.12A				
Weight	0.20kg					0.35kg				
External Dimensions	118(W) x 50(H) x 40(D)mm					151.9(W) x 65(H) x 63(D)mm				

Note: 1 digit refers to one bit.

## AJ65SBT-64AD Module Features

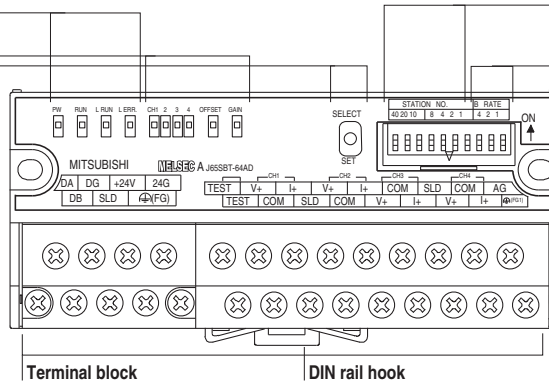
### Operating condition LED display

LED name	Item checked
PW	On: When the power supply is turned on
RUN	Normal mode On: Normal operation mode
L RUN	On: When the communication is normal
L ERR.	On: When the transmission speed or station number setting is outside the range

### LED display for offset/gain adjustment

CHD	Normal	Always off
OFFSET	mode	
GAIN		

### SELECT/SET switch



### Terminal block

The compact remote I/O module power supply, transmission, and I/O signals are connected here.

### DIN rail hook

### Station number setting switches

Station no.	10-digit				Unit-digit		
	40	20	10	8	4	2	1
1	OFF	OFF	OFF	OFF	OFF	OFF	ON
2	OFF	OFF	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	OFF	OFF	ON	ON
4	OFF	OFF	OFF	OFF	OFF	OFF	OFF
...	...	...	...	...	...	...	...
10	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	OFF	OFF	ON	OFF	OFF	OFF	ON
...	...	...	...	...	...	...	...
64	ON	ON	OFF	OFF	ON	OFF	OFF

### Transmission speed setting switches

Setting value	Setting switch			Transmission speed
	4	2	1	
0	OFF	OFF	OFF	156 kbps
1	OFF	OFF	ON	625 kbps
2	OFF	ON	OFF	2.5 Mbps
3	OFF	ON	ON	5.0 Mbps
4	ON	OFF	OFF	10 Mbps

## AJ65BT-64AD Module Features

### Station number setting switches

### Transmission speed setting switch

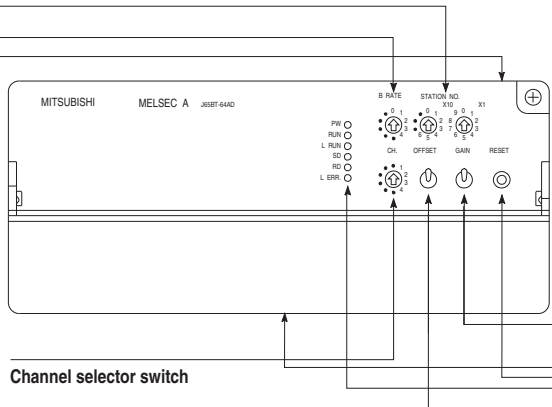
Setting number	Transmission speed
0	156 kbps (factory setting)
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps
Other than 0 to 4	Not used (L ERR. LED turns on and a communication error occurs.)

### Analog input range setting pins

The analog input range is set as follows:

	Voltage	Current
A	0~10V	(0~20mA)*
B	1~5V	4~20mA
C	-10~10V	-20~20mA
D	0~5V	0~20mA

\* Use D when 0 to 20 mA is used.



### Channel selector switch

### OFFSET switch

### GAIN switch

### RESET switch

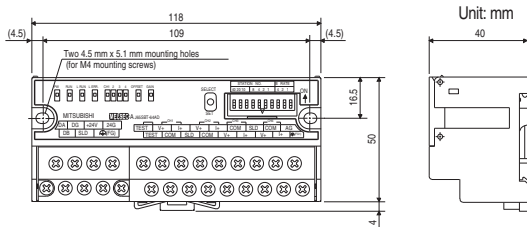
### Operating condition LED display

LED name	Item checked
PW LED	On: When the power supply is turned on
RUNLED	Normal mode On: Normal operation
L RUN LED	On: When the communication is normal
SD LED	Turns on during data transmission
RD LED	Turns on during data reception
L ERR. LED	On: Communication data error

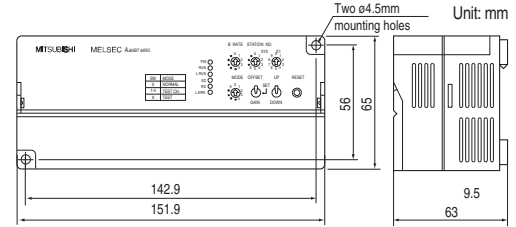
### Terminal block



## AJ65SBT-64AD External Dimensions



## AJ65BT-64AD External Dimensions



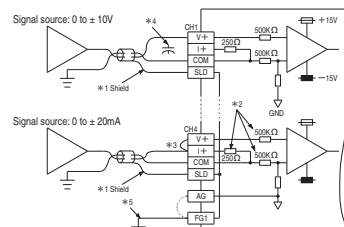
## AJ65SBT-64AD/ AJ65BT-64AD External Connection Diagram

### In case of voltage input

Signal source: 0 to  $\pm 10V$

### In case of current input

Signal source: 0 to  $\pm 20mA$



\*1 For wiring, use two-core shielded twisted-pair cable.

\*2 Indicates the input resistance of AJ65SBT-64AD and AJ65BT-64AD, respectively.

\*3 Connect a capacitor of around 0.1 to 0.47  $\mu F$  (it must be a product that can withstand voltages of 25 V or more) between the V and COM terminals if noise or ripple is generated in the external wiring.

\*4 Be sure to ground FG1. There are cases where AG should also be grounded if the signal is particularly noisy. The offset or gain value should be set again if the ground wiring is changed after setting the offset or gain value (whether the signals were connected to ground or not).

## CC-Link Analog I/O Modules: AJ65VBTCU-68DAVN Digital To Analog Converter Module

- Compatible with CC-Link V2.0.
- Eight analog channels occupy only one station, instead of three with CC-Link V1.10.
- High precision analog to digital conversion.
- Switchable output ranges for each channel.
- Clear or retain analog output when the controller stops.
- One-touch connectors reduce installation time and cost (available separately).
- Module can be replaced without disrupting the network (when “on-line” network connector is used.)
- Certification: UL • cUL • CE

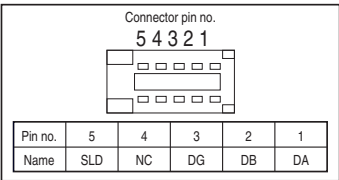


### Performance Specifications

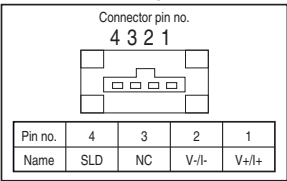
Model Name		AJ65VBTCU-68DAVN					
Digital Value		12 bit + sign (-4096 to +4095)					
Analog Output		-10 to +10 VDC (external load resistance: 2 k to 1 M)					
Input/Output Characteristics							
*Accuracy (Accuracy Relative to the Maximum Analog Output Value)		Voltage	Digital	Analog	Accuracy		Maximum resolution
					Ambient temperature 0 to 55 °C	Ambient temperature 25 ±5 °C	
			-4000 to +4000	-10 to +10 V	±0.3% (±30 mV)	±0.2% (±20 mV)	2.5mV
				User range setting 1 (-10 to +10 V)			
			0 to 4000	0 to 5 V	±0.3% (±15 mV)	±0.2% (±10 mV)	1.25mV
				1 to 5 V			1.0mV
				User range setting 2 (0 to 5 V)			1.25mV
Output Range Switching			For each channel				
Offset/Gain Setting		Yes					
Maximum Conversion Speed		1 ms/channel					
Output Short-Circuit Protection		Yes					
Absolute Maximum Output		±12V					
Number of Analog Output Points		8 channels/module					
Station Type		Remote device station					
Number of Occupied Stations, Expanded Cyclic Setting		Ver. 1 mode: 3 stations (RW/r/RWw 12 words each, RS/Ry 32 points) Ver. 2 mode: 1 station (extended word (RW/r/RWw) 16 words each, RX/Ry 32 points), Quadruple					
CC-Link-Compatible Function		Cyclic transmission, extended cyclic transmission, station-to-station cable length relaxation					
Isolation Method		Between communication system and batch of analog outputs: Photocoupler isolation Between power supply system and batch of analog outputs: Photocoupler isolation Between channels: No isolation					
External Connection Method		One-touch connector for communication [transmission circuit] (5-pin/solderless type. The connector plug is sold separately.) One-touch connector for power supply and FG [module power supply and FG] (5-pin/solderless type. The connector plug is sold separately.) One-touch connector for analog input (4-pin/solderless type. The connector plug is sold separately.) (Optional parts) Online connector for communication: A6CON-LJ5P, online connector for power supply: A6CON-PWJ5P					
Applicable Wire Size	One-Touch Connector for Communication	Communication line: CC-Link dedicated cable compatible with Ver.1.10, 0.5 mm <sup>2</sup> (AWG20) [ø 2.2 to 3.3 mm] Shielded power supply 0.5 mm <sup>2</sup> (AWG20)					
	One-Touch Connector for Power Supply	0.66 to 0.98 mm <sup>2</sup> (AWG18) [ø 2.2 to 3.0 mm], wire size 0.08 mm <sup>2</sup> or more					
	One-Touch Connector for Analog I/O	ø1.0 to 1.4 mm (A6CON-P214), ø1.4 to 2.0 mm (A6CON-P220), [applicable wire size: 0.14 to 0.2 mm <sup>2</sup> ] ø1.0 to 1.4 mm (A6CON-P514), ø1.4 to 2.0 mm (A6CON-P520), [applicable wire size: 0.3 to 0.3 mm <sup>2</sup> ]					
Applicable DIN Rail		TH35-7.5Fe, TH35-7.5Al (compliant to JIS C 2812) Metal fitting for CC-Link connector type: A6PLT-J65V1					
External Power Supply		24 VDC (20.4 to 26.4 VDC with a ripple rate of 5% or less)					
Inrush Current		4.3 A, 1.2 ms max.					
Internal Current Consumption		0.15A					
Weight		0.16kg					
External Dimensions		41(W) x 115(H) x 63(D)					

Module Features

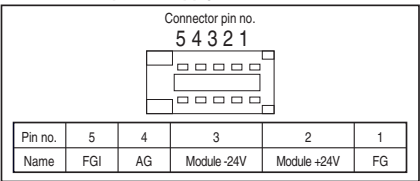
Connector for communication



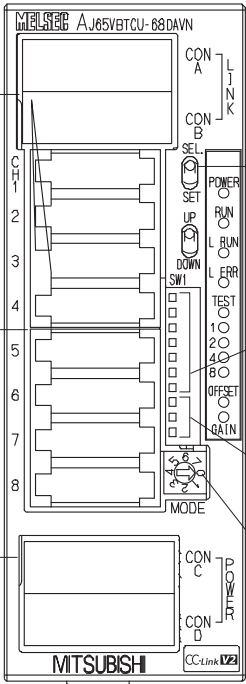
Connector for analog I/O



Connector for power supply



\* For a detailed description of the connectors, see introduction to CC-Link section.



SELECT/SET switch

Operating condition LED display

Description	
POWER	On: When the power supply is turned on
RUN	Normal mode On: Normal operation
	Test mode On: When the SELECT/SET switch is in the SET position Off: When the SELECT/SET switch is in the SELECT or central position
L RUN	On: When the communication is normal
L ERR	Off: When the communication is normal

LED display for offset/gain adjustment

Transmission speed setting switch

Setting value	Transmission speed
0	156kbps
1	625kbps
2	2.5Mbps
3	5.0Mbps
4	10Mbps

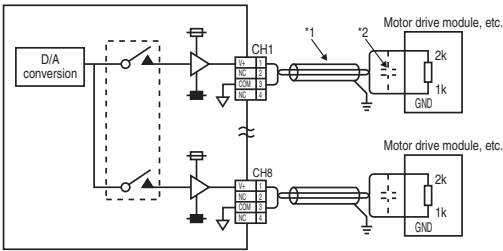
Station number setting switch

"10," "20," and "40" in STATION NO. are used for setting the second digit of the station number.  
"1," "2," "4," and "8" in STATION NO. are used for setting the first digit of the station number.

Mode selector switch

Description	
AJ65VBTCU-68DAVN	
Ver.1 mode	Ver.2 mode
0: Normal mode	3: Normal mode
1: Test mode (user range setting 1)	4: Test mode (user range setting 1)
2: Test mode (user range setting 2)	5: Test mode (user range setting 2)
	6 to 7: Not used

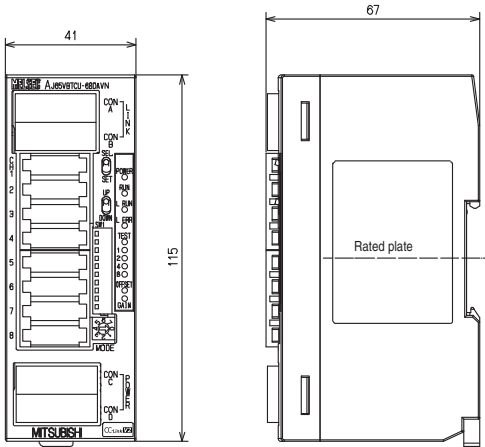
External Connection



\*1 For wire, use two-core shielded twisted-pair cable.  
\*2 Connect a capacitor of around 0.1 to 0.47  $\mu$ F (it must be a product that can withstand voltages of 25 V or more) between the V and COM terminals if noise or ripple is generated in the external wiring.

External Dimensions

Unit: mm



## CC-Link Analog Modules: AJ65SBT-62DA • AJ65SBT-64DAV • AJ65SBT-64DAI Digital To Analog Converter Module

### AJ65SBT-64AD Analog Input

- Two channels (voltage input / current input)
- Handles analog ranges  $\pm 10$  VDC and 0 ~ 20mA
- Switchable analog outputs
- Compact size
- Certification: UL • cUL • CE

### AJ65BT-64DAV

- Four channels (voltage output)
- Handles analog ranges  $\pm 10$  VDC and 0 ~ 20mA
- Certification: UL • cUL • CE

### AJ65BT-64DAI

- Four channels (current output).
- Digital values from 0 to +4000 can be converted to analog values of 4 mA to +20 mA
- Certification: UL • cUL • CE



## Performance Specifications

Model Name		AJ65SBT-62DA					AJ65BT-64DAV				AJ65BT-64DAI				
Digital	Voltage	12 bit + sign ( - 4096 to +4095)					11 bit + sign ( - 2048 to +2047)								
Value	Current	12 bit (0 to +4095)									12 bit (0 to 4095)				
Analog	Voltage	-10 to +10 VDC (external load resistance: 2 k to 1 M )					-10 to +10 VDC (external load resistance: 2 k to 1 M )								
Output	Current	0 to 20 mA DC (external load resistance: 0 to 600 )									4 to 20 mA DC (external load resistance: 0 to 600 )				
Input/Output Characteristics  *Accuracy (Accuracy Relative to the Maximum Analog Output Value)		Voltage	Digital Value	Analog Output	Maximum Resolution	Accuracy		Digital Value	Analog Output	Maximum Resolution	Accuracy (Overall)	Digital Value	Analog Output	Maximum Resolution	Accuracy (Overall)
						Ambient Temperature 0 to 55 °C	Ambient Temperature 25 ±5 °C								
			- 4000 to +4000	-10 to +10 V	2.5mV	±0.4%	±0.2%	+2000	+10V	5mV	±1 (±0 mV)				
			- 4000 to +4000	-10 to +10 V (user range setting 1)	2.5mV	(±40mV)	(±20mV)	+1000	+5V						
			0 to 4000	0 to 5 V	1.25mV	±0.4% (±20mV)	±0.2% (±10mV)	0	±0						
		0 to 4000	1 to 5 V	1.0mV	-1000			-5V							
		0 to 4000	0 to 5 V (user range setting 2)	1.25mV	-2000			-10V							
		Current	0 to 4000	0 to 20 mA	5μA	±0.4% (±80μA)	±0.2% (±40μA)					4000	+20mA	4μA	±1 (±200mA)
			0 to 4000	4 to 20 mA	4μA							2000	+12mA		
			0 to 4000	0 to 20 mA (user range setting 3)	5μA							0	+4mA		
Output Range Switching		For each channel					None								
Offset/Gain Setting		Yes													
Output Short-Circuit Protect.		Yes													
Max. Conversion Speed		1 ms/channel													
No. of Analog Output Points		2 channels/module					4 channels/module								
No. of Occupied Stations		1 station (32 points each for RX/R <sub>Y</sub> , 4 words each for RW <sub>r</sub> /RW <sub>w</sub> )					2 stations (32 points each for RX/R <sub>Y</sub> , 8 words each for RW <sub>r</sub> /RW <sub>w</sub> )								
Connection Terminal Block		7-point 2-piece terminal block (transmission, power supply), directly mounted 18-point terminal block (analog output area), M3 screws					17-point terminal block, M3.5 screws								
Applicable Wire Size		0.3 to 0.75 mm <sup>2</sup>					0.75 to 2.00 mm <sup>2</sup>								
Module Mounting Screws		M4 x 0.7 mm x 16 mm or more, possible to mount on a DIN rail													
Applicable DIN Rail		TH35-7.5Fe, TH35-7.5Al (compliant to JIS C 2812)					TH35-7.5Fe, TH35-7.5Al, TH35-15Fe (compliant to JIS C 2812)								
Applicable Solderless Term.		RAV1.25 to 3.5 (compliant to JIS C 2805)					RAV1.25 to 3.5, RAV2 to 3.5								
Internal Current Consumption (24 VDC)		0.16A					0.18 A				0.27A				
Weight		0.2kg					0.2kg								
External Dimensions		118(W) x 50(H) x 40(D) mm					151.9(W) x 65(H) x 63(D)mm								

AJ65SBT-62DA Module Features

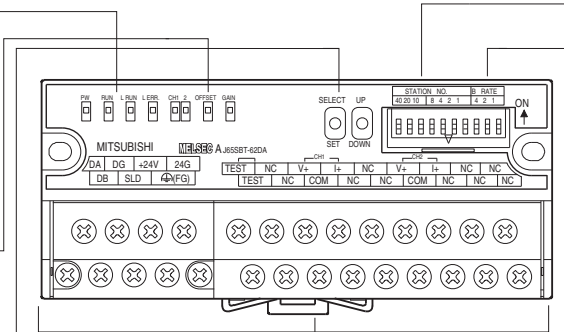
Operating condition LED display

LED name	Item checked
PW	On: When the power supply is turned on
RUN	Normal mode On: Normal operation mode
L RUN	On: When the communication is normal
L ERR.	On: When the transmission speed or station number setting is outside the range

LED display for offset /gain adjustment

CH0 OFFSET GAIN	Normal mode	Always off
-----------------------	-------------	------------

SELECT/SET switch



**Terminal block**  
The compact remote I/O module power supply, transmission, and I/O signals are connected here.

**DIN rail hook**  
Hook for mounting the module to the DIN rail

Station number setting switches

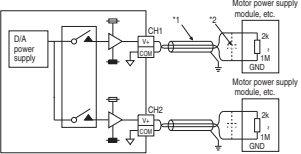
Station no.	40	20	10	8	4	2	1
1	OFF	OFF	OFF	OFF	OFF	OFF	ON
2	OFF	OFF	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	OFF	OFF	ON	ON
4	OFF	OFF	OFF	OFF	ON	OFF	OFF
:	:	:	:	:	:	:	:
10	OFF	OFF	ON	OFF	OFF	ON	OFF
11	OFF	OFF	ON	OFF	OFF	ON	ON
:	:	:	:	:	:	:	:
64	ON	ON	OFF	OFF	ON	OFF	OFF

Transmission speed setting switches

Setting value	Setting switch 4	Setting switch 2	Setting switch 1	Transmission speed
0	OFF	OFF	OFF	156 kbps
1	OFF	OFF	ON	625 kbps
2	OFF	ON	OFF	2.5 Mbps
3	OFF	ON	ON	5.0 Mbps
4	ON	OFF	OFF	10 Mbps

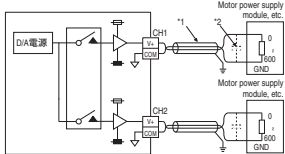
External Connections

In case of voltage output

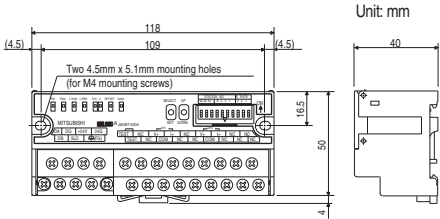


\*1 For wire, use two-core shielded twisted-pair cable.  
\*2 Connect a capacitor of around 0.1 to 0.47  $\mu$ F (it must be a product that can withstand voltages of 25 V or more) to the input terminals of an external device if noise or ripple is generated in the external wiring.

In case of current output



External Dimensions



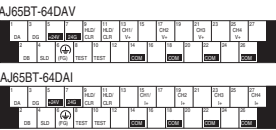
AJ65BT-64DAV/DAI Module Features

Station number setting switches

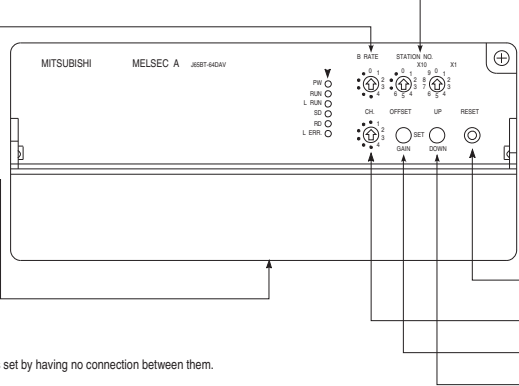
Transmission speed setting switch

Setting number	Transmission speed
0	156 kbps (factory setting)
1	625 kbps
2	2.5 Mbps
3	5.0 Mbps
4	10 Mbps

Terminal block



HLD/CLR setting terminal  
HOLD is set by short-circuiting the terminals, while CLEAR is set by having no connection between them.



Station number setting switch

LED name	Item checked
PW	On: When the power supply is turned on
RUN	Normal mode On: Normal operation
L RUN	On: When the communication is normal
SD	Turns on during data transmission
RD	Turns on during data reception
L ERR.	On: When the baud rate or station number setting is outside the range

**RESET (reset switch)**

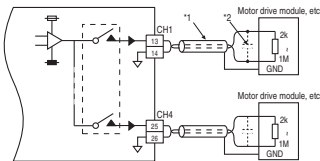
**CH. (CHANNEL) selector switch**

**OFFSET/GAIN**

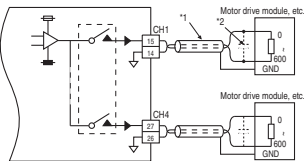
**UP/DOWN switch**

External Connections

AJ65BT-64DAV

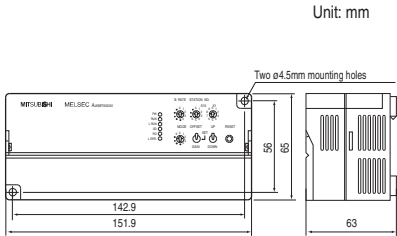


AJ65BT-64DAI



\*1: For wiring, use two-core shielded twisted-pair cable.  
\*2: Connect a capacitor of around 0.1 to 0.47  $\mu$ F 25V to the input terminals of an external device if noise or ripple is generated in the external wiring.

External Dimensions



## CC-Link Analog Modules: AJ65BT-68TD • AJ65BT-64RD3 • AJ65BT-64RD4 Temperature Input Modules

### AJ65BT-68TD

- Eight thermocouple inputs per module.
- Compatible with K, E, J, T, B, R and S thermocouples.
- Assign any thermocouple type to each channel.
- Enable/disable conversion for each channel.
- Disconnection detection.
- Select either sampling or moving average processing for each channel.
- Automatic cold junction compensation for PT100 RTD.
- Certification: UL • cUL • CE

### AJ65BT-64RD3 / 64RD4

- Four RTD inputs per module.
- Enable/disable conversion for each channel.
- Disconnection detection.
- Offers moving average processing to reduce effects of noise.
- Accurate to  $\pm 0.25\%$  of full scale measurement.
- Certification: UL • cUL • CE



## Performance Specifications

Model name	AJ65BT-68TD	AJ65BT-64RD3	AJ65BT-64RD4
Measurement Method		Three wire type	Four wire type
Connectable Platinum Resistance Temp. Sensors		Pt100, JPt100	
Connectable Thermocouples	B, R, S, K, E, J, T		
Temperature Input Range	-200 to 1700 °C	-180 to 600 °C	
Temperature Detection Value	16-bit signed binary (-2000 to 17000: Value up to the first decimal place x 10)	16-bit signed binary (-800 to 6000: Value up to the first decimal place x 10) 32-bit signed binary (-80000 to 600000: Value up to the third decimal place x 1000)	
Scaling Value	16-bit signed binary (0 to 2000)		
Overall Accuracy	*1	Ambient temperature (20 °C or less, 30 °C or more)	±0.1% (accuracy relative to the maximum value)
		Ambient temperature (20 °C or less, 30 °C or more)	±0.25% (accuracy relative to the maximum value)
Cold-Junction Compensation System (°C)	±1.0		
Resolution (°C)	B, R, S, 0.3°C K, E, J, T : 0.1°C	0.025°C	
Conversion Speed (Sampling Time: ms/ch)	45 ms/channel	40 ms/channel	
Temperature Sensor Input Channel	8 channels + 1 channel for connecting the Pt100 sensor	4 channels/module	
Station Type	Remote device station		
Number of Occupied Stations	4 stations (128 points each for RX/RX, 16 words each for RW/RWw)		
Isolation Method	Between thermocouple input and CC-Link transmission system and between channels: Transformer isolation	Between platinum resistance temperature sensor input and CC-Link transmission system : Photo-coupler isolation / Between channels: No isolation	
Applicable Solderless Terminal	RAV1.25 to 3.5 (compliant to JIS C 2805)	RAV1.25 to 3.5, RAV2 to 3.5 (compliant to JIS C 2805)	
Connection Terminal Block	27-point terminal block (M3.5 x 7 screws)		
Allowable Momentary Power Failure Period	1ms		
Applicable Wire Size	0.75 to 2.00 mm²		
Module Mounting Screws	M4 x 0.7 mm x 16 mm or more, possible to mount on a DIN rail		
Applicable DIN Rail	TH35-7.5Fe, TH35-7.5Al, TH35-15Fe (compliant to JIS C 2812)		
External Power Supply	24 VDC (18 to 30 VDC)		
Internal Current Consumption (24 VDC)	0.081A	0.17A	
Weight	0.40kg	0.38kg	
External Dimensions	151.9(W) x 65(H) x 63(D) mm		

\*1 The calculation method of overall accuracy is as shown below:  
 (Overall accuracy) + (Conversion accuracy) x (Temperature characteristic) + (Operating ambient temperature change) + (Cold-junction compensation accuracy)  
 Here, the operating ambient temperature change denotes a value not within the operating ambient temperature range of 25±5°C.

Example: In the case of the overall accuracy with operating thermocouple of K,  
 measured temperature of 150°C, and operating ambient temperature of 35°C, the following applies:  
 $(\pm 0.5^\circ\text{C}) + (\pm 0.06^\circ\text{C}) \times (5^\circ\text{C}) + (\pm 1^\circ\text{C}) = \pm 1.8^\circ\text{C}$



AJ65BT-68TD Module Features

Station setting switches

Transmission speed setting switch

Setting number	Transmission speed
0	156 kbps (factory setting)
1	625 kbps
2	2.5 Mbps
3	5 Mbps
4	10 Mbps
Other than 0 to 4	Not used (If other than 0 to 4 is set, L ERR. LED turns on and a communication error occurs.)

Mode setting switch

0	NORMAL	Select this when ending the test mode and entering normal operation (factory setting)
1 to 8	TEST CH.	These settings select a channel for which errors are compensated for in the test mode.
9	TEST	Select TEST to compensate for errors. The test mode is entered after 2 seconds.

Terminal block

Offset/gain setting switch

OFFSET	Compensation mode of the offset value
GAIN	Compensation mode of the gain value
SET	The temperature detection value when the OFFSET/GAIN switch is placed in the SET position, is stored in the internal memory of AJ65BT-68TD as the offset/gain value.

Operating condition LED display

LED name	Item checked
PW LED	On: When the power supply is turned on
RUNLED	Normal mode On: Normal operation
L RUN LED	On: When the communication is normal
SD LED	Turns on during data transmission
RD LED	Turns on during data reception
L ERR. LED	On: Communication data error (CRC error)

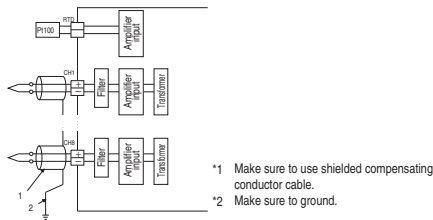
Reset switch

UP/DOWN switch

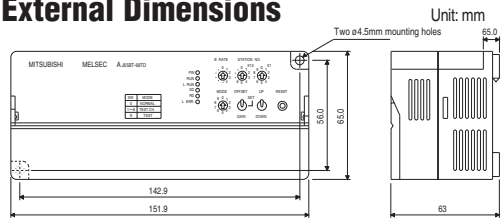
Pt100 resistance temperature sensor

Resistance temperature sensor for measuring terminal block temperature (attached to the module)

External Connections



External Dimensions



AJ65BT-64RD3/RD4 Module Features

Transmission speed setting switch

Setting number	Transmission speed
0	156 kbps (factory setting)
1	625 kbps
2	2.5 Mbps
3	5 Mbps
4	10 Mbps
Other than 0 to 4	Not used (If other than 0 to 4 is set, L ERR. LED turns on and a communication error occurs.)

Mode setting switch

0	NORMAL	Select this when ending the test mode and entering normal operation (factory setting)
1-8	TEST CH.	These settings select a channel for which errors are compensated for in the test mode.
9	TEST	Select TEST to compensate for errors. The test mode is entered after 2 seconds.

Terminal block

AJ65BT-64RD3

Offset/gain setting switch

OFFSET	Compensation mode of the offset value
GAIN	Compensation mode of the gain value
SET	The temperature detection value when the OFFSET/GAIN switch is placed in the SET position, is stored in the internal memory of AJ65BT-68TD as the offset/gain value.

Station setting switches

Pins for specifying the platinum resistance temperature sensor type

When a Pt100 sensor is connected	When a JPt100 sensor is connected
----------------------------------	-----------------------------------

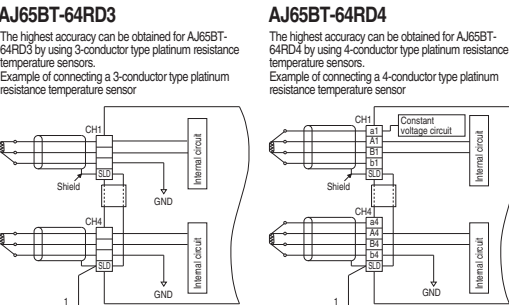
Station setting switches

LED name	Item checked
PW LED	On: When the power supply is turned on
RUNLED	Normal mode On: Normal operation
L RUN LED	On: When the communication is normal
SD LED	Turns on during data transmission
RD LED	Turns on during data reception
L ERR. LED	On: Communication data error (CRC error)

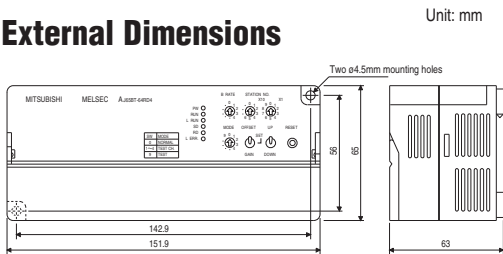
Reset switch

UP/DOWN switch

External Connections



External Dimensions



\*1: According to the operating environment, it may be better to connect in some cases.

## CC-Link High-Speed Counter Modules

### AJ65BT-D62 • AJ65BT-D62D • AJ65BT-D62D-S1

#### AJ65BT-D62/D62D/D62D-S1

- 24 bit counter.
- 5/12/24 VDC (2 to 5 mA input).
- Switchable counting speed.
- Four counter functions:
  - Latch-counter function
  - Sampling counter function
  - Periodic pulse-counter function
  - Count-disable function

\* Certification: UL • CUL • CE

#### AJ65BT-D62

- DC input/sink output type.
- Preset DC input.
- Maximum counting speed: 200 kpps.

#### AJ65BT-D62D

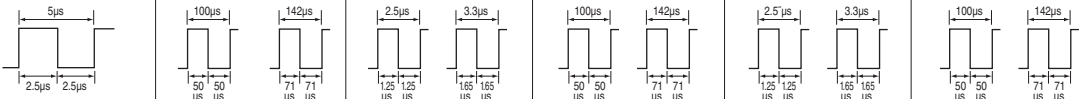
- Differential input/sink output type.
- Preset DC input.
- Maximum counting speed: 400 kpps.

#### AJ65BT-D62D-S1

- Differential input/sink output type.
- Preset differential input.
- Maximum counting speed: 400 kpps.



## Performance Specifications

Model Name			AJ65BT-D62		AJ65BT-D62D		AJ65BT-D62D-S1							
Counting Speed Selector Switch Setting			HIGH side		LOW side		HIGH side		LOW side					
Number of channels			2 channels											
Count Input Signal	Phase		1 phase input, 2 phase input											
	Signal Level (V <sub>A</sub> , V <sub>B</sub> )		5/12/24 VDC, 2 to 5 mA				EIA standard, RS-422-A differential type line driver level [Equivalent to Am26L31 (Japan Texas Instruments, Inc)]							
Counter	Counting Speed (Maximum)	1 Phase Input	200kpps		10kpps		400kpps		10kpps		400kpps		10kpps	
		2 Phase Input	200kpps		7kpps		300kpps		7kpps		300kpps		7kpps	
	Counting Range		24-bit binary 0 to 16777215											
	Model		Preset up/down counter and ring counter functions											
	Minimum Count Pulse Width													
			<div>(1 and 2 phase input)<sup>*1</sup><div>(1 phase input)<sup>*1</sup>(2 phase input)<sup>*1</sup></div>(1 phase input)<sup>*2</sup>(2 phase input)<sup>*2</sup>(1 phase input)<sup>*2</sup>(2 phase input)<sup>*2</sup>(1 phase input)<sup>*2</sup>(2 phase input)<sup>*2</sup></div>											
Coincidence Output	Comparison Range		24-bit binary											
	Comparison Result		Setting value < count value, setting value = count value, setting value > count value											
External Input	Preset		5/12/24 VDC, 2 to 5 mA								EIA standard, RS-422-A differential type line driver level [Equivalent to Am26L31 (Japan Texas Instruments, Inc)]			
	Function Start		5/12/24 VDC, 2 to 5 mA								5/12/24 VDC, 2 to 5 mA			
	Response Time		OFF—ON : 0.5 ms max., ON—OFF : 3 ms max.											
External Output	Coincidence Output		2A/1 common											
	Response Time		0.1 ms max.											
Station Type			Remote device station											
Number of Occupied Stations			4 stations											
Power Supply Voltage			18 to 28.8 VDC											
Current Consumption (at 24 VDC)			70mA				100mA				120mA			
Connection Terminal Block			27-point terminal block (M3.5 x 7 screws)											
Applicable Wire Size			0.75 to 2.00 mm <sup>2</sup>											
Applicable Solderless Terminal			RAV1.25 to 3.5, RAV2 to 3.5 (compliant to JIS C 2805)											
Allowable Momentary Power Failure Period			1ms											
Module Mounting Screws			M4 x 0.7 mm x 16 mm or more, possible to mount on a DIN rail											
Applicable DIN Rail			TH35-7.5Fe, TH35-7.5Al, TH35-15Fe (compliant to JIS C 2812)											
Weight			0.41kg				0.42kg							

\*1 The rise and fall time of the input signal should be 2 µs or less and have a duty cycle of 50%.

\*2 The rise and fall time of the input signal should be 0.1 µs or less and have a duty cycle of 50%.

# Module Features

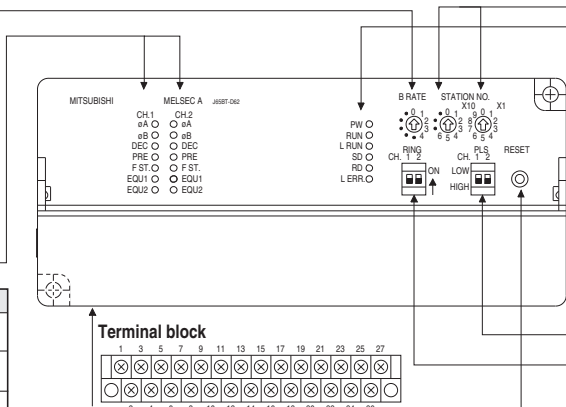
## Transmission speed setting switch

This is used for setting the transmission speed of the high-speed counter module (for data link).

Setting number	Transmission speed
0	156 kbps (factory setting)
1	625 kbps
2	2.5 Mbps
3	5 Mbps
4	10 Mbps
Other than 0 to 4	Not used (If other than 0 to 4 is set, L ERR. LED turns on and a communication error occurs.)

## LED display

LED name	Item checked
øA	Turns on when voltage is applied to the phase A pulse input terminal.
øB	Turns on when voltage is applied to the phase B pulse input terminal.
DEC	Turns on when the counter value is decremented.
PRE	Turns on and remains on when voltage is applied to the RESET terminal.
F ST.	Turns on when the counter value is equal to coincidence output setting No. 1.
EQU1	Turns on when the counter value is equal to coincidence output setting No. 2. (Not available in AJ65BT-D62D-S1)
EQU2	Turns on when the counter value is equal to coincidence output setting No. 2. (Not available in AJ65BT-D62D-S1)



## Station number setting switches

The station number of the high-speed counter module should be set within the range from 1 to 61.  
\*X10\* is used for setting the ten-digit of the station number.  
\*X1\* is used for setting the unit-digit of the station number.

## LED display

LED name	Item checked
PW	On: When the power supply is turned on
RUN	On: Normal operation
L RUN	On: When the communication is normal
SD	Turns on during data transmission
RD	Turns on during data reception
L ERR.	On: Communication data error

## Mode switch

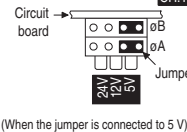
## Ring counter setting switch

This is used to set whether to enable or disable the ring-counter function.

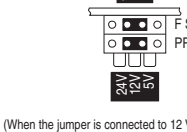
## Reset switch

## Pulse input setting pin (same for CH.2)

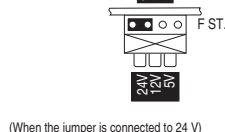
### AJ65BT-D62



### AJ65BT-D62D



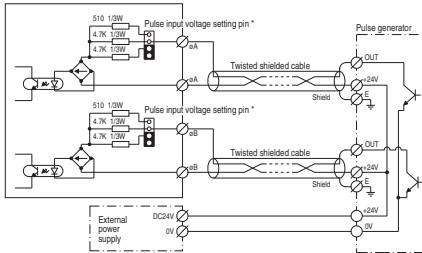
### AJ65BT-D62D-S1



# External Connections

Example of connection with a pulse generator (24 VDC) of open-collector output type

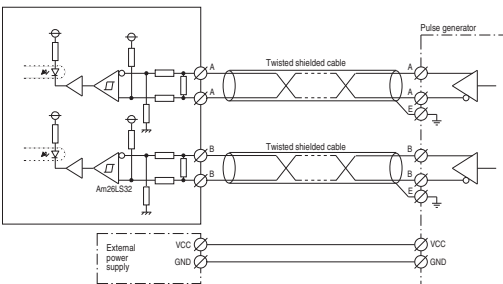
### AJ65BT-D62



Remark: \*Set the pulse input voltage setting pin to the B position.

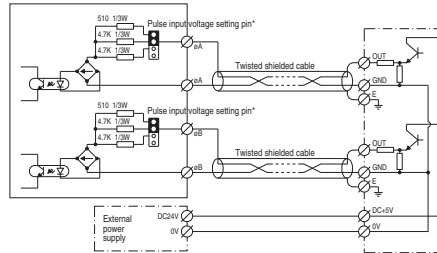
Example of connection with a line driver pulse generator (equivalent to Am26L31)

### AJ65BT-D62D



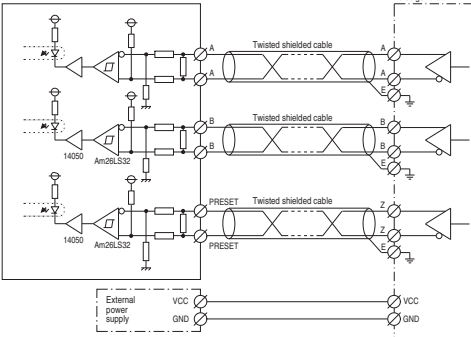
Example of connection with a pulse generator (5 VDC) of voltage-output type

### AJ65BT-D62

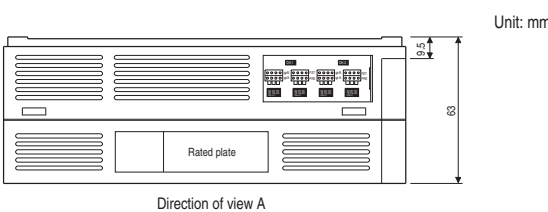
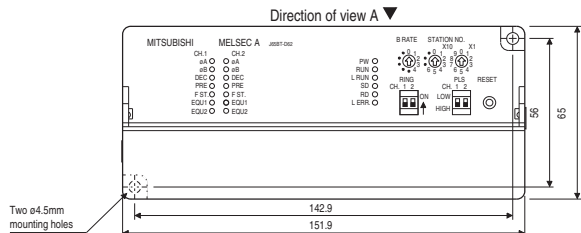


Remark: \*Set the pulse input voltage setting pin to the B position.

### AJ65BT-D62D-S1



# External Dimensions



## CC-Link Positioning Module: AJ65BT-D75P2-S3

- Decentralized motion control — can be placed anywhere on a CC-Link network.
- Supports absolute positioning with Mitsubishi's intelligent digital servo line.
- Differential driver supports pulse output to 400 kpps and 10M distance to amplifiers.
- A wide selection of positioning control functions including:
  - Seven types of home position return functions
  - Automatic trapezoid and S curve acceleration/deceleration methods
- Point table for each axis (up to 600 points).
- Certification: UL • cUL • CE



## Performance Specifications

Item		Specification
Number of Control Axes		2 axes
Interpolation Function		2-axis linear interpolation, 2-axis circular interpolation <sup>*1</sup>
Control Method		PTP (Point to Point) control, locus control (both linear and circular interpolation can be set), speed control, speed/position switch control
Control Unit		mm, inch, degree, pulse
Positioning Data		It is possible to set 600 data points (positioning data No.: 1 to 600) per axis
Peripheral Device /Software Package		Windows version 75P GX Configurator-AP A7HGP /SW1RX-AD75P or later PC-9800 series /SW1NX-AD75P or later <sup>*2</sup> DOS/V PC (IBM PC/AT compatible PC) /SW1IVD-AD75P or later <sup>*3</sup>
Teaching Module		AD75TU (software version D or later)
Backup		Parameters and positioning data are stored in the flash memory (battery-less).
Positioning	Positioning Method	PTP control: Increment/absolute system Speed/position switch control: Increment/absolute system <sup>*4</sup> Locus control: Increment/absolute system
	Positioning Range	Absolute system • -214748364.8 to 214748364.7 (μm)/ -13421772.8 to 13421772.7 (μm) <sup>*5</sup> • -21474.83648 to 21474.83647 (inch)/ -1342.17728 to 1342.17727 (inch) • 0 to 359.99999 (degree)/0 to 359.99999 (degree) • 2147483648 to 2147483647 (pulse)/ -134217728 to 134217727 (pulse) Increment system • -214748364.8 to 214748364.7 (μm)/ -13421772.8 to 13421772.7 (μm) • -21474.83648 to 21474.83647 (inch)/ -1342.17728 to 1342.17727 (inch) • -21474.83648 to 21474.83647 (degree)/ -1342.17728 to 1342.17727 (degree) • -2147483648 to 2147483647 (pulse)/ -134217728 to 134217727 (pulse) Speed/position switch control (increment system) • 0 to 214748364.7 (μm)/0 to 13421772.7 (μm) • 0 to 21474.83647 (inch)/0 to 1342.17727 (inch) • 0 to 21474.83647 (degree)/0 to 1342.17727 (degree) • 0 to 2147483647 (pulse)/0 to 134217727 (pulse) Speed/position switch control (absolute system) • 0 to 359.99999 (degree)/0 to 359.99999 (degree)
	Speed Command	0.01 to 6000000.00 (mm/min)/0.01 to 375000.00 (mm/min) <sup>*5</sup> 0.001 to 600000.000 (inch/min)/0.001 to 37500.000 (inch/min) 0.001 to 600000.000 (degree/min)/0.001 to 37500.000 (degree/min) 1 to 1000000 (pulse/s)/1 to 62500 (pulse/s)

Item		Specification
Positioning	Acceleration /Deceleration Processing	Automatic trapezoid acceleration/deceleration and S-curve acceleration/deceleration <sup>*6</sup>
	Acceleration /Deceleration Time	It is possible to switch between 1 to 65535 (ms) and 1 to 8388608 (ms) It is possible to set 4 patterns for both acceleration and deceleration times.
	Rapid-Stop Deceleration Time	It is possible to switch between 1 to 65535 (ms) and 1 to 8388908 (ms) (same ranges as for the acceleration/deceleration time)
	Starting Time	20 ms or less (excluding link scan time)
Connector		10136-3000VE (soldering-type, accessory) 10136-6000EL (pressure connection type, sold separately)
Applicable Wire Size		In case of 10138-3000VE: AWG#2 to #30 (approximately 0.05 to 0.2 SQ) In case of 10138-6000VE: AWG#28 (approximately 0.08 SQ)
Maximum Output Pulse		When connected to differential driver: 400 kbps When connected to open collector: 200 kbps
Maximum Connection Distance Between Servos		When connected to differential driver: 10 m When connected to open collector: 2 m
Station type		Intelligent device station
Number of Occupied Stations		4 stations (128 points each for RX/RV, 16 words each for RW/RWw)
External Power Supply		24 VDC (20.4 to 26.4 V)
Applicable Wire Size		0.75 to 2.00 mm <sup>2</sup>
Module Mounting Screws		M4 x 0.7 mm x 16 mm or more, possible to mount on a DIN rail
Applicable DIN Rail		TH35-7.5Fe, TH35-7.5Al, TH35-15Fe (compliant to JIS C 2812)
Applicable Solderless Terminal		RAV1.25 to 3.5, RAV2 to 3.5
24 VDC Internal Current Consumption		0.30A
External Dimensions		170(W) x 63.5(H) x 80(D) mm
Weight		0.50kg

<sup>\*1</sup> The circular interpolation function is not available when a stepping motor is used.

<sup>\*2</sup> PC-9800 Series is a registered trademark of NEC

<sup>\*3</sup> DOS/V is a registered trademark of IBM Japan, Ltd.

<sup>\*4</sup> In the absolute method, the control unit of the speed/position switch control is "degree" only.

<sup>\*5</sup> Indicates the setting range of "standard mode/stepping motor mode."

<sup>\*6</sup> The automatic S-curve acceleration/deceleration is not available when a stepping motor is used.

Module Features

Axis LED display

These LEDs indicate the axis to which the information displayed if the "17-segment LED display" applies.

17-segment LED display

These LEDs display information indicating operation status according to the selected mode.

RS-422 connector for peripherals

This connector is used for connection with peripheral devices.

Terminal block

Terminal for connecting to the master module

Drive module connectors (AX1 and AX2)

These connectors are used to connect to drive modules, mechanical system inputs and manual pulse generators.

LED display mode selector switch

The information displayed in the "[1] Axis LED display" and the "17-segment LED display" is switched every time this switch is pressed.

Reset switch

Press this switch to initialize input signal, remote register, and calculation processing.

CC-Link status LED display

These LEDs display power-supply status and data-communication status.

LED name	Item checked
PW	On: When the power supply is turned on
RUN	On: Normal operation
L RUN	On: When the communication is normal
SD	Turns on during data transmission
RD	Turns on during data reception
L ERR.	On: Communication data error

Transmission speed setting switch

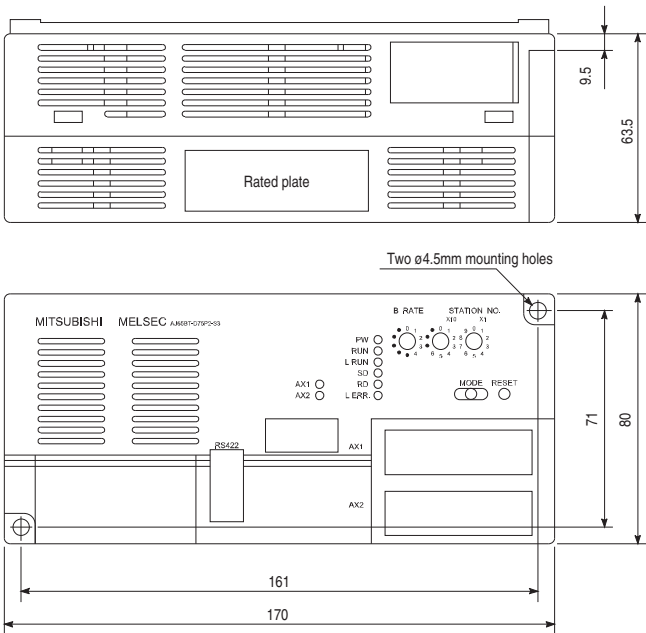
This is used for setting the data communication speed.

B RATE	Setting number	Transmission speed
	0	156 kbps
	1	625 kbps
	2	2.5 Mbps
	3	5 Mbps
	4	10 Mbps

Station number setting switches

These switches are used for setting the station number of D75P2.

External Dimensions



Unit: mm

CC-Link Peripheral Device Connection Module • AJ65BT-G4-S3

- Allows full access to controller programs and memory via the CC-Link network via built-in RS-422 port.
- Perform program upload and download from across the network.
- Certification: UL • cUL • CE



Performance Specifications

Model Name	AJ65BT-G4-S3
Peripheral Device Connector	D-sub 25 pin 1 channel
Station Type	Intelligent device station
Number of Occupied Stations	1 stations (32 points each for RX/RX, 4 words each for RWr/RWw)
Allowable Momentary Power Failure Period	1ms
Applicable Solderless Terminal	RAV1.25 to 3.5, RAV2 to 3.5 (compliant to JIS C 2805)
Module Mounting Screws	M4 x 0.7 mm x 16 mm screws or larger Possible to mount on a DIN rail
Applicable DIN Rail	TH35-7.5Fe, TH35-7.5Al, TH35-15Fe (compliant to JIS C 2812)
24 VDC Internal Current Consumption	0.19A
External Power Supply (For Driving the Module)	24 VDC (15.6 to 28.8 V)
Weight	0.36kg
External Dimensions	80(W) x 170(H) X 63.5(D) mm

Module Features

**Transmission speed setting switch**

Setting number	Transmission speed
0	156 kbps (factory setting)
1	625kbps
2	2.5Mbps
3	5Mbps
4	10Mbps
Other than 0 to 4	Not used (If other than 0 to 4 is set, L ERR LED turns on and a communication error occurs.)

**Station number setting switches**  
These switches are used for setting the station number of G4-S3 in the range from 1 to 63 or 1 to 64.

**Reset switch**  
Hardware reset

**Operation setting DIP switch**  
This is used for setting the operation specification of G4-S3.

Switch no.	Setting item	Status of setting switch		
		ON	OFF	
1.6	Operation mode	SW1	SW6	Operation mode
		OFF	OFF	A mode
		ON	OFF	OnA mode
		OFF	ON	G mode
ON	ON	Setting not allowed		
2.3	Peripheral device transmission speed (bps)	SW2	SW3	Transmission speed
		OFF	OFF	9600bps
		ON	OFF	19200bps
		OFF	ON	38400bps
ON	ON	Setting not allowed		
4.5	Not used	Fixed at OFF		
7	Not used	—		
8	Test mode	Test mode	Online mode	

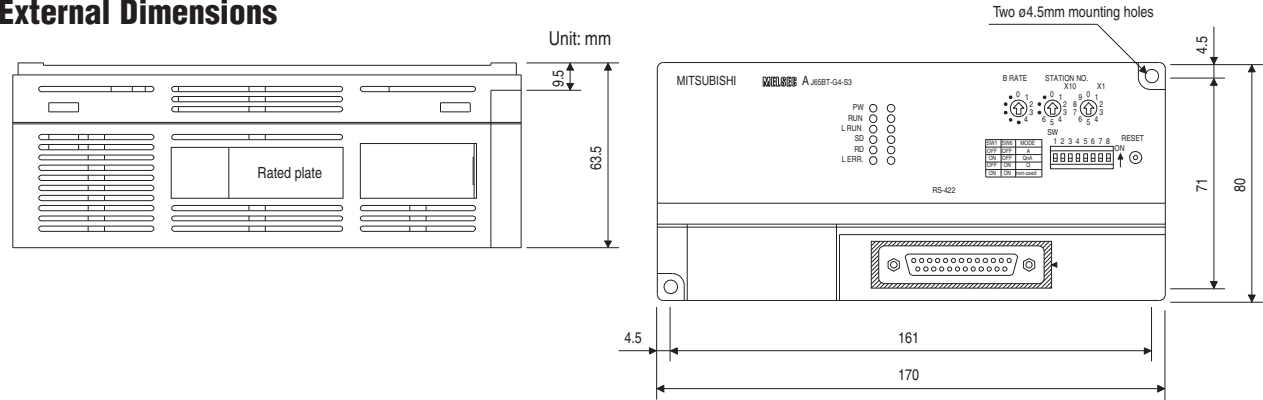
**Terminal block for power supply and data link**

**LED display**

PW	On: When the power supply is turned on
RUN	On: Normal operation
L RUN	On: Normal communication
SD	Turns on during data transmission
RD	Turns on during data reception
L ERR	Off: When the communication is normal

**RS-422 interface**  
Interface for connecting peripheral devices

External Dimensions



CC-Link Repeater Module • AJ65SBT-RPT

- Allows distance of a CC-Link network to be extended up to 13.2 km with regular BA1SJ61-S or BA1SJ61-P cable.
- Use a maximum of 10 repeaters per segment.
- Allows T-branch configurations.
- Certification: UL • cUL • CE



Performance Specifications

Model Name	AJ65SBT-RPT
Maximum Number of Connected Modules (Levels) Per Segment	10
Maximum Transmission Distance Of Each Segment	Varies depending on the transmission speed. Same as the normal CC-Link system (a system consisting of one segment)
Number of Occupied Stations (Stations)	None
Station Numbers That Can Be Set	No station number
Power Supply Voltage	20.4 to 26.4 VDC
Current Consumption	0.06 A (at TYP 24 VDC)
External Dimensions	87.3(W) X 54(H) X 40(D) mm
Weight	0.2kg

Module Features

Operation LED display

The status of the module can be checked by the on/off status of the LED display.

LED	At hardware test	At normal operation
PW	On: The power supply is turned on. Off: The power supply is turned off, or the reset switch is pressed.	
TEST	On: A hardware test is being performed. Off: During communication operation	
ERR.	On: Hardware error The switch setting value is abnormal. Flashing: The switch setting value was changed during operation. Off: Normal	On: Communication error The switch setting value is abnormal. Flashing: The switch setting value was changed during operation. Off: Communication is normal.
SD1	Flashing: The circuit is normal. Off: The circuit is abnormal.	Flashing: Transmitting data to the IN side. Off: Not transmitting data to the IN side.
RD1	Flashing: The IN side circuit is normal. Off: The IN side circuit is abnormal.	Flashing: Receiving data from the IN side. Off: No reception data from the IN side.
SD2	Flashing: The circuit is normal. Off: The circuit is abnormal.	Flashing: Transmitting data to the OUT side. Off: No data is transmitted to the OUT side.
RD2	Flashing: The OUT side circuit is normal. Off: The OUT side circuit is abnormal.	Flashing: Receiving data from the OUT side. Off: No reception data from the OUT side.

Reset switch

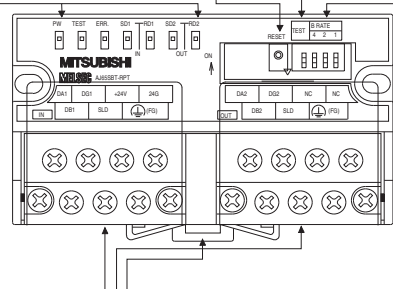
Pressing this switch resets the module's hardware. (The factory setting is OFF.)

Switch status	Operation status
ON	Hardware test
OFF	Normal operation

Test switch

This is used to set the operating condition of the module. (The factory setting is OFF.)

Switch status	Operation status
ON	Hardware test
OFF	Normal operation



IN side terminal block

This terminal block is used to connect the CC-Link dedicated cable on the side where the power supply and master station exist.

OUT side terminal block

This terminal block is used to connect the CC-Link dedicated cable on the side where the master station does not exist.

DIN rail hook

Hook for mounting the module to the DIN rail.  
Press on the centerline of the DIN rail rail hook until it clicks in order to mount the module.

Point

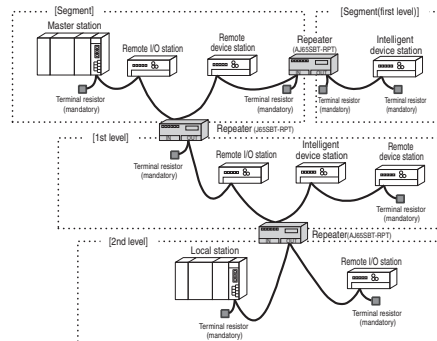
The settings of the test switch and transmission speed setting switch are valid as made when the power supply to the module is turned off and back on again or the reset switch is turned off.  
The operations above should be performed again if the settings are changed while the power supply to the module is turned on.

Transmission speed setting switch

This is used for setting the transmission speed of the module. (The factory setting is 0.)  
Make sure to set the transmission speed in the range below. The "ERR." LED of the LED display turns on if a setting other than the ones listed below is made.

Setting value	Status of setting switch	Transmission speed
0	OFF OFF OFF	156kbps
1	OFF OFF ON	625kbps
2	OFF ON OFF	2.5Mbps
3	OFF ON ON	5Mbps
4	ON OFF OFF	10Mbps

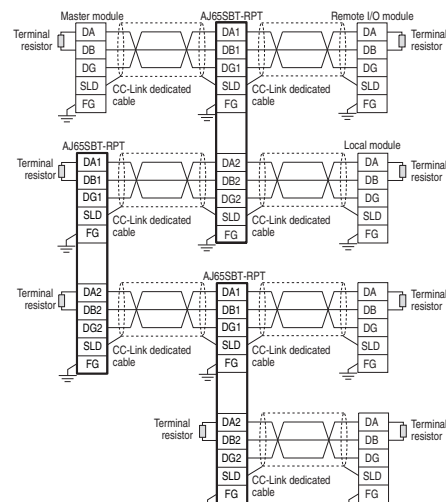
System Configuration



- \*1 The repeater is a module used to connect each segment and extend the CC-Link system.
- \*2 In a CC-Link system using repeaters, a block of devices connected by wiring from one terminal resistor to another terminal resistor is referred to as a segment. (A conventional CC-Link system can be said to be a single-segment configuration.)
- \*3 It is necessary to match the transmission speed of each segment to the transmission speed of the master

External Connections

The following figure shows how to connect AJ65SBT-RPT to the CC-Link system with cables.



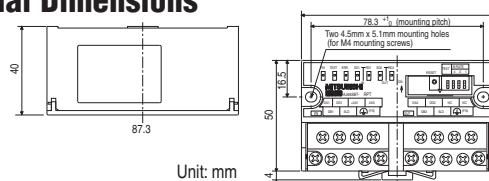
Important

It is possible to use CC-Link dedicated cables of different specifications for each segment. However, within each segment CC-Link dedicated cables with the same specifications should be used. Normal data transmission cannot be guaranteed if multiple specifications are used.

Point

- \* Make sure to connect a terminal resistor to the modules at both ends of a segment. Terminal resistors should also be connected between DA and DB (between DA1 and DB1 as well as DA2 and DB2 in case of AJ65SBT-RPT).
- \* The terminal resistors used vary according to the type of cable used. For more information, see the user's manual for the master module to be used.
- \* The shielded wire of the CC-Link dedicated cable should be connected to "SLD" of each module, and both sides should be treated with Class D grounding (Class 3 grounding) via FG. \* Note that SLD and FG are connected within the module.

External Dimensions





CC-Link Optical Repeater Modules: AJ65SBT-RPS • AJ65SBT-RPG

- Allows distance of a CC-Link network to be extended up to 7.8 km using optical fiber cable.
- Use in environments where noise is a problem.
- Allows T-branch configurations in regular copper network cable.
- Use a maximum of 6 repeaters per segment.
- Certification: UL • cUL • CE

Performance Specifications

Model Name			AJ65SBT-RPS		AJ65SBT-RPG	
Common Specification	Power Supply	Voltage	20.4 to 26.4 VDC			
		Current	0.06 A (at TYP 24 VDC)			
	External Dimensions		118(W) x 54(H) x 40(D)mm			
	Weight		0.2kg			
	Supplied Parts		Terminal resistors (110 x 1, 130 x 1)			
CC-Link Communication Specification	Maximum Number of Connected Levels in a System		3 levels		2 levels	
	Number of Occupied Stations		None			
Optical Communication Specification	Connection Cable		SI-200/220		QSI-185/230	
	Applicable Connector		CA7003		GI-50/125	
	Maximum Transmission Distance of Optical Fiber Cable Between Repeaters		500m		1000m	
				2000m		

Module Features

Operation LED display

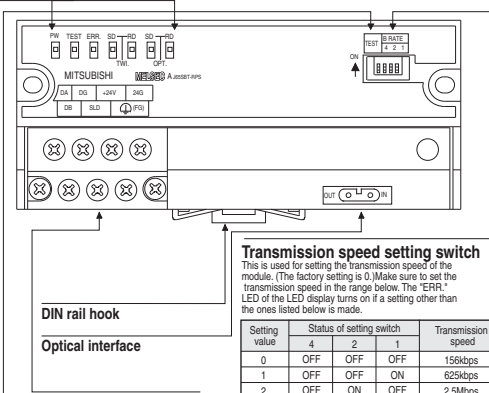
The status of the module can be checked by the on/off status of the LED display.

LED name	At hardware test	At normal operation
PW	On: The power supply is turned on. Off: The power supply is turned off.	
TEST	On: A hardware test is being performed. Off: During communication operation	
ERR	On: Hardware error. The switch setting value is abnormal. Flashing: The switch setting value was changed during operation. Off: Normal	On: Communication error. The switch setting value is abnormal. Flashing: The switch setting value was changed during operation. Off: Communication is normal.
TW.SD	Flashing: The circuit is normal. Off: The circuit is abnormal.	Flashing: Not transmitting data to the CC-Link side. Off: Not transmitting data to the CC-Link side.
TW.RD	Flashing: The CC-Link side circuit is normal. Off: The optical communication side circuit is abnormal.	Flashing: Receiving data from the optical communication side. Off: No reception data from the CC-Link side.
OPT.SD	Flashing: The circuit is normal. Off: The circuit is abnormal.	Flashing: Transmitting data to the optical communication side. Off: No data is transmitted to the optical communication side.
OPT.RD	Flashing: The CC-Link side circuit is normal. Off: The optical communication side circuit is abnormal.	Flashing: Receiving data from the optical communication side. Off: No reception data from the optical communication side.

Test switch

This is used to set the operating condition of the module. (The factory setting is OFF.)

Switch status	Operation status
ON	Hardware test
OFF	Normal operation



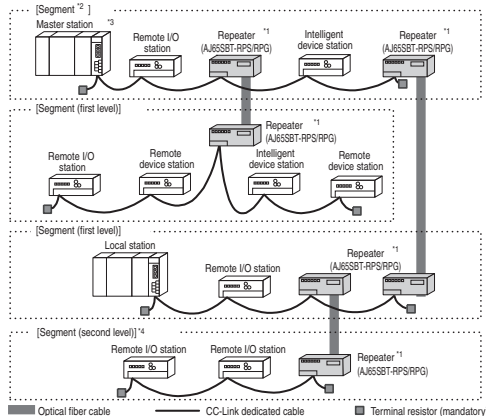
Terminal block

This terminal block is used for connecting the power supply and CC-Link dedicated cables.

Point

The settings of the test switch and transmission speed setting switch are valid as made while the power supply to the module is turned off and back on again. The operations above should be performed again if the settings are changed while the power supply to the module is turned on.

System Configuration



Combinations of optical repeater module and optical fiber cable to be used

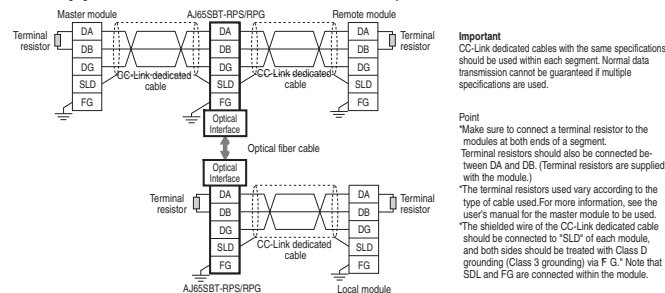
The optical repeater modules can be used in the following combinations with optical fiber cable.

Optical repeater module	Optical fiber cable
AJ65SBT-RPS	SI-type optical fiber cable (maximum extension distance of cable: 500 m)
	QSI-type optical fiber cable (maximum extension distance of cable: 1000 m)
AJ65SBT-RPG	GI-type optical fiber cable (maximum extension distance of cable: 2000 m)

- \*1 The repeater is a module used to connect each segment and extend the CC-Link system.
- \*2 In a CC-Link system using repeaters, a block of devices connected by wiring from one terminal resistor to another terminal resistor is referred to as a segment. (A conventional CC-Link system can be said to be a single-segment configuration.)
- \*3 It is necessary to match the transmission speed of each segment to the transmission speed of the master station.
- \*4 Up to 3 levels can be used in one segment (up to 2 levels when AJ65SBT-RPG modules are used).

External Connections

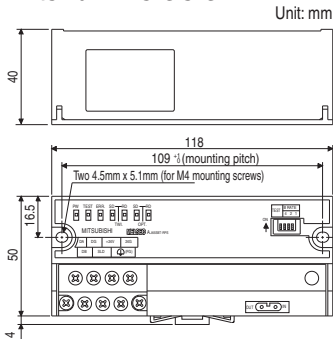
The following figure shows how to connect AJ65SBT-RPS/RPG to the CC-Link system with cables.



Important  
CC-Link dedicated cables with the same specifications should be used within each segment. Normal data transmission cannot be guaranteed if multiple specifications are used.

Point  
Make sure to connect a terminal resistor to the modules at both ends of a segment. Terminal resistors should also be connected between DA and DB. (Terminal resistors are supplied with the module.)  
The terminal resistors used vary according to the type of cable used. For more information, see the user's manual for the master module to be used. The shielded wire of the CC-Link dedicated cable should be connected to "SLD" of each module, and both sides should be treated with Class D grounding (Class 3 grounding) via F.G. Note that SLD and FG are connected within the module.

External Dimensions





# CC-Link Wireless Optical Repeater Module: AJ65B-RPI-10A • AJ65BT-RPI-10B

- Wireless optical link is ideal for rotating machinery, to replace festoon cabling, etc.
- Use “A” and “B” modules as a pair.
- Certification: CE



## Performance Specifications

Model name			AJ65BT-RPI-10A • AJ65BT-RPI-10B
Common Specification	Power Supply	Voltage	20.4 to 26.4 VDC
		Current	0.137A (at TYP. 24VDC)
	External Dimensions		161(W) x 100(H) x 57.5(D) mm
	Weight		0.5kg
CC-Link Communication Specification	Transmission Speed		2.5M/625k/156kbps
	Maximum Number of Connected Levels in a Segment		2 levels
	Number of Occupied Stations		When the monitoring function is used: 1 (remote I/O station), when the monitoring function is not used: 0 (no station is occupied)
Optical Communication Specification	Optical Transmission Distance		0 to 100 m
	Angle of Beam Spread (°)		When the optical transmission distance is 0 to 50 m: Total angle ±2 When the optical transmission distance is 50 to 100 m: Total angle ±1
	Modulation Frequency		Module A to module B: 36 ± 3 MHz Module B to module A: 44 ± 2.5MHz
	Modulation Method		FSK
Specially Noted General Specification	Ambient Illumination *		Must be 10000 lx or less (avoid direct sunlight)

\*Reference values (based on JIS Z9110) of ambient illumination are shown below.  
Illumination required for detailed visual work in a plant: 3000 to 1500 lx  
Illumination required for work in an office: 2000 to 750 lx

## Module Features

### Operation LED display

The status of the module can be checked by the on/off status of the LED display.

LED name	Description
PW	On: The power supply is turned on. Off: The power supply is turned off.
LRUN	On: Normal communication while the monitoring function is used Off: When a communication error occurred while the monitoring function is used, or while the monitoring function is not used
LERR	On: When a communication error occurred while the monitoring function is used, or while the monitoring function is not used Off: Normal communication while the monitoring function is used
ERR	On: Communication error Off: Normal
SD1	On: Sending data to the cable side Off: Not sending data to the cable side
SD2	On: Sending data to the optical output side Off: Not sending data to the optical output side
RD1	On: Receiving data from the connection cable side Off: Not receiving data from the connection cable side
RD2	On: Receiving data from the optical input side Off: Not receiving data from the optical input side
SC	RY (n+1) 0 is turned on. Off: RY (n+1) 0 is turned off.
S1	On: RY (n+1) 1 is turned on. Off: RY (n+1) 1 is turned off.
S2	On: RY (n+1) 2 is turned on. Off: RY (n+1) 2 is turned off.
S3	On: RY (n+1) 3 is turned on. Off: RY (n+1) 3 is turned off.
RC	On: Optical reception is enabled for the self-station. Off: Optical reception is disabled for the self-station.
R1	On: The margin in light reception of the self-station is 1.5 times or more. Off: The margin in light reception of the self-station is less than 1.5 times. (Using RC as the standard.)
R2	On: The margin in light reception of the self-station is 2.0 times or more. Off: The margin in light reception of the self-station is less than 2.0 times. (Using RC as the standard.)
R3	On: The margin in light reception of the self-station is 2.5 times or more. Off: The margin in light reception of the self-station is less than 2.5 times. (Using RC as the standard.)

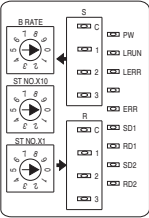
Turns on only when the monitoring function is used.

### Transmission speed setting switch

This is used for setting the transmission speed of the module.  
(The factory setting is 0.)

Setting value	Transmission speed
0	156kbps
1	625kbps
2	2.5Mbps
3 to 9	Setting not allowed

### Enlarged view



### Station number setting switch (ten digits)

### Station number setting switch (unit digits)

This is used for setting the station number of the module, and to set whether or not to use the monitoring function. (The factory setting is OFF.)

00	When the monitoring function should not be used
01 to 64	Station number when the monitoring function is used
65 to 99	Setting not allowed

### Display window mounting screw

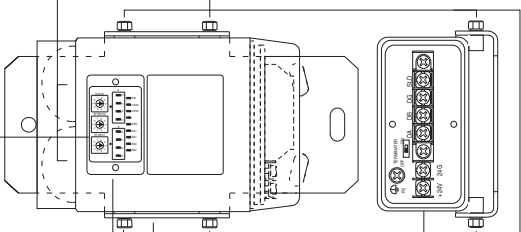
This screw is used for fixing the display window to the module.  
Remove the display window when performing the switch setting.

### Lens surface

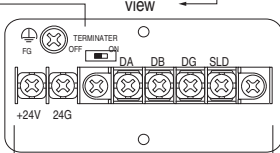
This is the lens surface used for performing optical communication.

### Module mounting screws

These are used for fixing the module to the mounting metal fittings.



### Enlarged view



### Terminal block

This terminal block is used for connecting the power supply and CC-Link dedicated cable.

### Terminal resistor switch

This is used for setting whether or not to use the module's built-in terminal resistor (110 Ω). (The factory setting is 0.)

### Mounting metal fittings

Metal fittings for mounting the module

### Point

The settings of the transmission speed setting switch and station number setting switches are valid as made while the power supply to the module is turned off and back on again.  
The operations above should be performed again if the settings are changed while the power supply to the module is turned on.

## Module Connection

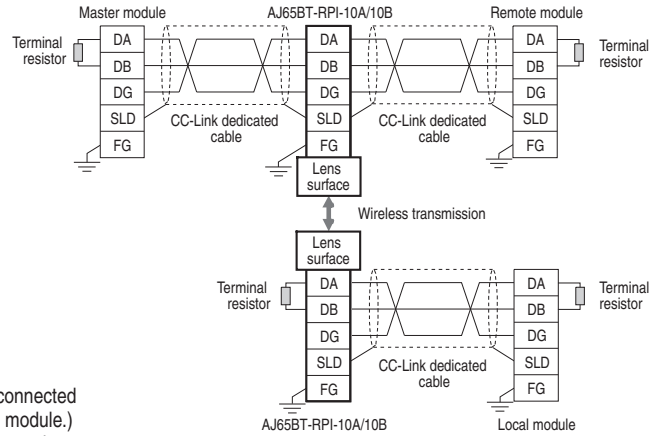
Here it is explained how to connect the AJ65BT-RPI-10A/10B to the CC-Link system with the CC-Link dedicated cables. Remove the terminal block protection cover of the modules before performing the wiring work.

### Important

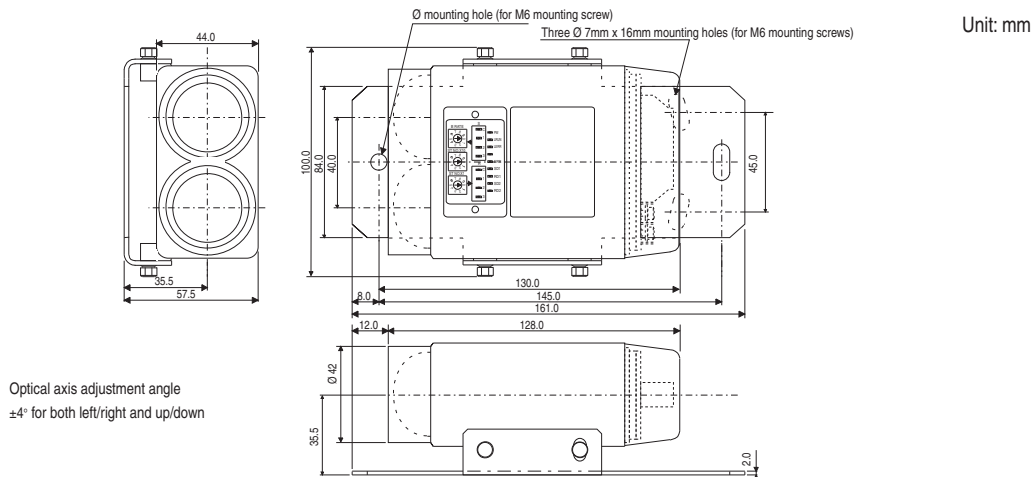
CC-Link dedicated cables with the same specifications should be used within each segment. Normal data transmission cannot be guaranteed if multiple specifications are used.

### Point

- Make sure to connect a terminal resistor to the modules at both ends of a segment. Terminal resistors should also be connected between DA and DB. (Terminal resistors are supplied with the module.)
- The terminal resistors used vary according to the type of cable used.
- For more information, see the user's manual for the master module to be used.
- The shielded wire of the CC-Link dedicated cable should be connected to "SLD" of each module, and both sides should be treated with Class D grounding (Class 3 grounding) via "FG." Note that SLD and FG are reconnected within the module.



## Module Dimensions



# CC-Link RS-232 Interface Module: AJ65BT-R2

- Provides a single RS-232 port directly on the CC-Link network.
- Allows general purpose RS-232 devices to be located remotely (Printer, barcode, reader, etc.)
- Certification: UL • cUL • CE



## Performance Specifications

Model Name		AJ65BT-R2
RS-232 Specification	Interface Specification	Conforms to single-channel RS-232C (A)
	Transmission Method	Full duplex communication method
	Synchronization Method	Asynchronous method
	Transmission Speed	300, 600, 1200, 2400, 4800, 9600, 19200 bps (Selected by the RS-232 transmission specification setting switch)
	Data Format	Start Bit
		Data Bit
		Parity Bit
		Stop Bit
	Error Detection	Odd/even parity check/no parity check
	Communication Control (Flow Control)	DTR/DSR (ER/DR) control DC1/DC3 control
Data Link Specification	Transmission Distance	15m
	OS Reception Area	5120 bytes
	General-Purpose I/O Specification	Input side: 24 VDC (sink/source common type) 2 points Output side: Transistor output (sink type) 12/24 VDC 2-point terminal block (B) (C)
	CC-Link Station Type	Intelligent device station
	Number of Occupied Stations	1 station (32 points each for RX/RX, 4 words each for RW/RW)
	Power Supply Voltage	24 VDC
	Current Consumption	Typically 110 mA (24 VDC), 180 mA (16.8 V) maximum
	EEPROM Writing Life	100,000 times
	External Dimensions	170(W) x 80(H) x 63.5(D) mm
	Weight	395g

## External Connections

The following shows how to connect the pins of the RS-232 interfaces of the AJ65BT-R2 module and the external device.

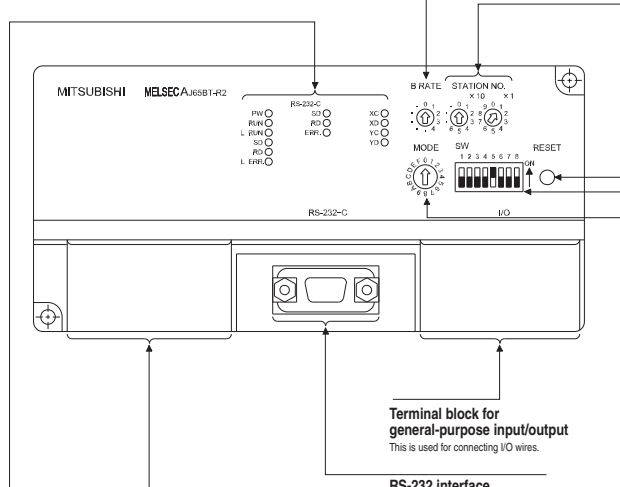
Example of connection where DC code control and DTR/DSR signal control are possible

AJ65BT-R2 side (DTE)		Cable connection and signal method	External device (DTE)	
Signal code	Pin no.		Signal code	
SD	3	↔	SD	
RD	2	↔	RD	
RS	7	↔	RS	
CS	8	↔	CS	
DR	6	↔	DR	
SG	5	↔	SG	
CD	1	↔	CD	
ER	4	↔	ER	

Example of connection where only DC code control is possible

AJ65BT-R2 side (DTE)		Cable connection and signal method	External device (DTE)	
Signal code	Pin no.		Signal code	
SD	3	↔	SD	
RD	2	↔	RD	
RS	7	↔	RS	
CS	8	↔	CS	
DR	6	↔	DR	
SG	5	↔	SG	
CD	1	↔	CD	
ER	4	↔	ER	

## Module Features



### Transmission speed setting switch

Setting value	Transmission speed
0	156kbps
1	625kbps
2	2.5Mbps
3	5Mbps
4	10Mbps
StoB	Setting error

### Station number setting switches

These switches are used for setting the station number of the module.

### Reset switch

Pressing this switch causes the module to return to the status when the power supply is turned on.

### RS-232 transmission specification setting switch

This is used for setting the RS-232 transmission specification.

Number	Setting item	Status of setting switch			
		ON OFF			
SW1 to 8	Transmission speed	SW 1	2	3	
		0	0	0	300bps
		1	0	0	600bps
		0	1	0	1200bps
		1	1	0	2400bps
		0	0	1	4800bps
		1	0	1	9600bps
		0	1	1	19200bps
SW4	Not used	0: OFF 1: ON			
SW5	Number of data bits	8	7		
SW6	Parity bit enable/disable	Enable	Disable		
SW7		Even	Odd		
SW8	Setting item	2	1		

### Mode setting switch

This is for setting the operating condition of the module.

Number	Name	Setting
0	Online mode (The automatic buffer memory update function is not active.)	Online communication mode. The automatic buffer memory update function is not active.
1	Online mode (The automatic buffer memory update function is active.)	Online communication mode. The automatic buffer memory update function is active.
D	Hard test mode	Hard test mode itself operates properly.

### Operation LED display

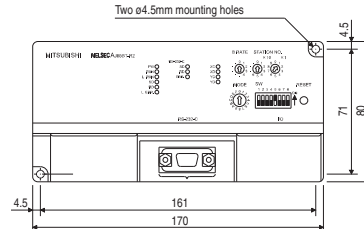
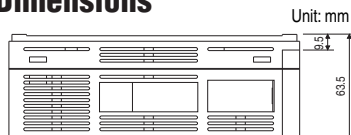
LED name	Description
Initial status	PW: Turns on when the power is normally supplied. RUN: Turns on when the module is normal, and turns off at a WDT error.
Status	L RUN: Turns on when the network communication is normal. L ERR: Turns on when the network communication is abnormal (e.g., CRC error).
Other	SD: Flashes when sending data link data. RD: Flashes when receiving data link data. XC, XD: Status of general-purpose inputs. YC, YD: Status of general-purpose outputs. RS-232 SD: Turns on when sending RS-232 data. RS-232 RD: Turns on when receiving RS-232 data. RS-232 ERR: Turns on at an RS-232 transmission error, etc.

**Terminal block for general-purpose input/output**  
This is used for connecting I/O wires.

**RS-232 interface**  
This is used for an RS-232 cable connected to an external device.

**Terminal block for data link**  
A twisted pair cable is connected for the power supply and data link (two-piece terminal)

## External Dimensions



## CC-Link — CC-Link / LT Bridge Module

- The AJ65SBT-CLB provides a way to link a CC-Link / LT network to a CC-Link network.
- Certification: UL • cUL • CE

### Performance Specifications

Model		AJ65SBT-CLB		
CC-Link				
Station Type		Remote device station		
Number of Occupied Stations		Selected between 2, 4 and 8 stations*		
		When 2 stations are selected: 64 points for each of RX/RY (16 points used by the system), 8 words for each of RWr/RWw		
		When 4 stations are selected: 128 points for each of RX/RY (16 points used by the system), 16 words for each of RWr/RWw		
		When 8 stations are selected: 256 points for each of RX/RY When 8 stations are selected: 256 points for each of RX/RY		
CC-Link/LT				
Number of CC-Link Occupied Stations		2 stations occupied	4 stations occupied	8 stations occupied
Maximum Number of CC-Link/LT Connected Stations	4-Points Mode	12 stations	28 stations	56 stations
	8-Points Mode	6 stations	14 stations	28 stations
	16-Points Mode	3 stations	7 stations	14 stations
Remote Station Numbers		1 to 56		
Bridge Station Connection Position		Connected at the end of the trunk line		

\*When 8 stations are occupied, make parameter setting so that two 4-station occupying modules are consecutively connected.

Module Features

LED Display

	Name of LED	Color	Description of LED
Common	PW		Lit during correct operation of module. Lit: During correct operation of module Unlit: Clock stop or no power supply
	L RUN		Station Link Data Link Data Inter (net)
1. CC-Link part	L ERR.		Station Link Data Link Data Inter (net)
	L RUN	Red	<Data Link operation> Data Link Data Inter (net)
2. CC-Link/LT part	L ERR.		<Data Link operation> Data Link Data Inter (net)
	L RUN		<Data Link operation> Data Link Data Inter (net)
	ERR.		Station Lit: T is waiting Blink T is waiting Blink T is waiting

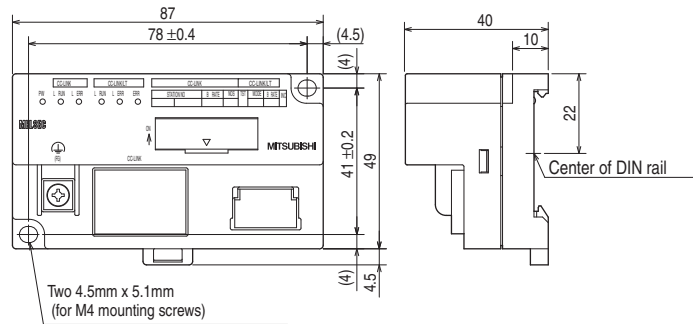
Operation setting switch

Name	Description of LED																																																																																
Station number setting switch STATION NO.	Use STATION NO. "10," "20" and "40" to set the tens digit of the station number. Use STATION NO. "1," "2," "4" and "8" to set the units digit of the station number. <table><thead><tr><th>Station No.</th><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr></thead><tbody><tr><td>1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>3</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr><tr><td>...</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>11</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>...</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>63</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>ON</td></tr></tbody></table> <p>All switches are OFF in the factory shipment state. When two stations are occupied, the setting range is from "1" to "63." When four stations are occupied, the setting range is from "1" to "61." When eight stations are occupied, the setting range is from "1" to "57." Settings out of the permissible range cause a setting error. Transmission speed setting switch</p>	Station No.	40	20	10	8	4	2	1	1	OFF	OFF	OFF	OFF	OFF	OFF	ON	2	OFF	OFF	OFF	OFF	OFF	ON	OFF	3	OFF	OFF	OFF	OFF	OFF	ON	ON	4	OFF	OFF	OFF	OFF	ON	OFF	OFF	...								10	OFF	OFF	ON	OFF	OFF	OFF	OFF	11	OFF	OFF	ON	OFF	OFF	OFF	ON	...								63	ON	ON	OFF	OFF	OFF	ON	ON
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Transmission speed setting switch B RATE	<table><thead><tr><th>Setting</th><th>Setting switch</th><th>Transmission speed</th></tr><tr><td></td><td>4</td><td>2</td><td>1</td></tr></thead><tbody><tr><td>0 (Factory shipment setting)</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156 kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625 kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>ON</td><td>OFF</td><td>10 Mbps</td></tr></tbody></table> <p>Settings other than above cause a setting error.</p>	Setting	Setting switch	Transmission speed		4	2	1	0 (Factory shipment setting)	OFF	OFF	OFF	156 kbps	1	OFF	OFF	ON	625 kbps	2	OFF	ON	OFF	2.5 Mbps	3	OFF	ON	ON	5.0 Mbps	4	ON	ON	OFF	10 Mbps																																																
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Number of occupied stations setting switch NOS: Numbers of Occupied Stations	<table><thead><tr><th>Setting</th><th>Setting switch</th><th>Number of Occupied Stations</th></tr><tr><td></td><td>2</td><td>1</td></tr></thead><tbody><tr><td>0 (Factory shipment setting)</td><td>OFF</td><td>OFF</td><td>2 stations</td></tr><tr><td>1</td><td>OFF</td><td>ON</td><td>4 stations</td></tr><tr><td>2</td><td>ON</td><td>OFF</td><td>8 stations</td></tr></tbody></table> <p>Settings other than above cause a setting error.</p>	Setting	Setting switch	Number of Occupied Stations		2	1	0 (Factory shipment setting)	OFF	OFF	2 stations	1	OFF	ON	4 stations	2	ON	OFF	8 stations																																																														
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Self loop-back test setting switch	OFF: Regular operation mode (Factory shipment setting) ON: Self loop-back test mode																																																																																
Number of points mode setting switch MODE	<table><thead><tr><th>Setting</th><th>Setting switch</th><th>Number of points</th></tr><tr><td></td><td>2</td><td>1</td></tr></thead><tbody><tr><td>0 (Factory shipment state)</td><td>OFF</td><td>OFF</td><td>8 points</td></tr><tr><td>1</td><td>OFF</td><td>ON</td><td>4 points</td></tr><tr><td>2</td><td>ON</td><td>OFF</td><td>16 points</td></tr></tbody></table> <p>Settings other than above cause a setting error.</p>	Setting	Setting switch	Number of points		2	1	0 (Factory shipment state)	OFF	OFF	8 points	1	OFF	ON	4 points	2	ON	OFF	16 points																																																														
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Number of points mode setting switch B RATE	<table><thead><tr><th>Setting</th><th>Setting switch</th><th>Transmission speed</th></tr><tr><td></td><td>2</td><td>1</td></tr></thead><tbody><tr><td>0 (Factory shipment state)</td><td>OFF</td><td>OFF</td><td>156 kbps</td></tr><tr><td>1</td><td>OFF</td><td>ON</td><td>625 kbps</td></tr><tr><td>2</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr></tbody></table> <p>Settings other than above cause a setting error.</p>	Setting	Setting switch	Transmission speed		2	1	0 (Factory shipment state)	OFF	OFF	156 kbps	1	OFF	ON	625 kbps	2	ON	OFF	2.5 Mbps																																																														
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CC-Link interface connector

CC-Link/LT interface connector

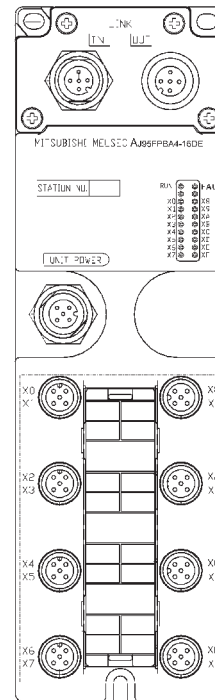
External Dimensions



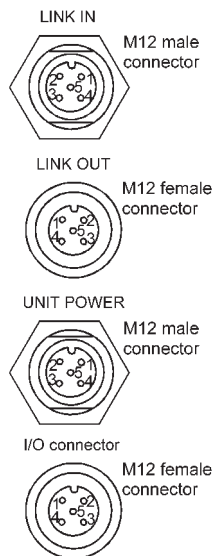
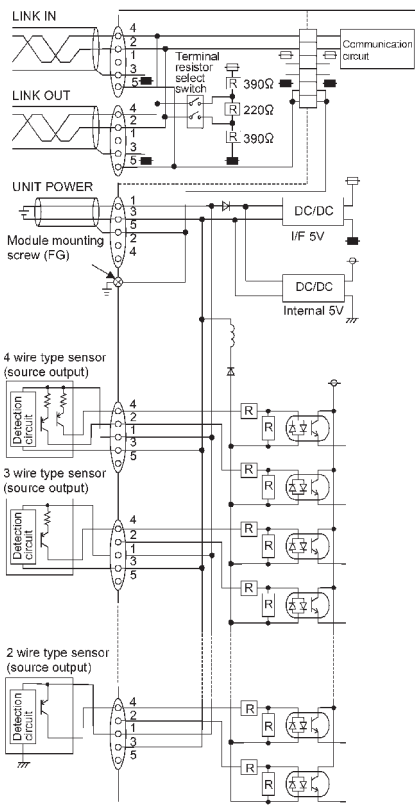
## Profibus-DP Node Style Waterproof DC Source Input Module, 4 Wire, M12 Connector

Specifications		AJ95FPBA4-16DE
Certification		UL • cUL • CE
Number of Input Points		16
Isolation Method		Photocoupler
Rated Input Voltage		24 VDC
Rated Input Current		Approx. 7 mA
Operating Voltage Range		20.4 to 26.4 VDC (ripple ratio within 5%)
Max. Simultaneous ON Input Points		100%
ON Voltage/ON Current		14V or higher / 3.5 mA or higher
OFF Voltage/OFF Current		6V or lower / 1.7 mA or lower
Input Resistance		Approx 3.3 kΩ
Response Time	OFF→ON	1.5 ms or lower (when 24 VDC)
	ON→OFF	1.5 ms or lower (when 24 VDC)
Common Wiring Method		16 points / 1 common (waterproof connector 2 to 4 wire type)
Input Method		Source type
Number of Stations Occupied		1 station
I/O Module Power Supply	Voltage	20.4 to 26.4 VDC (ripple rate: with 5%)
	Current	65 mA or lower (when 24 VDC and all points are ON)
Noise Durability		DC type noise voltage 500Vp-p, noise width 1 μs, noise carrier frequency 25 to 60Hz (noise simulator condition)
Dielectric Withstand Voltage		500 VAC for 1 minute between all DC external terminals and ground
Insulation Resistance		10 MΩ or higher, measured with a 500 VDC insulation resistance tester
Weight kg (lbs)		0.40 (0.88)
Level of Protection		IP67
Required Manual		AJ95FPBA4-16DE User's Manual • IB(NA)0800220 (Included)
Dimensions (W x H x D) mm (in)		60 (2.56) x 192 (7.76) x 48 (1.89)

### Appearance



### External Connection

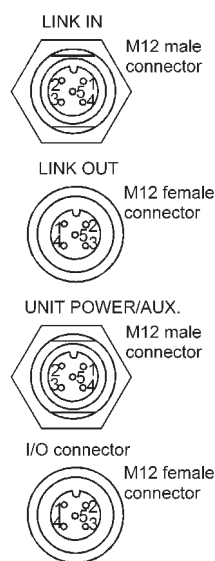
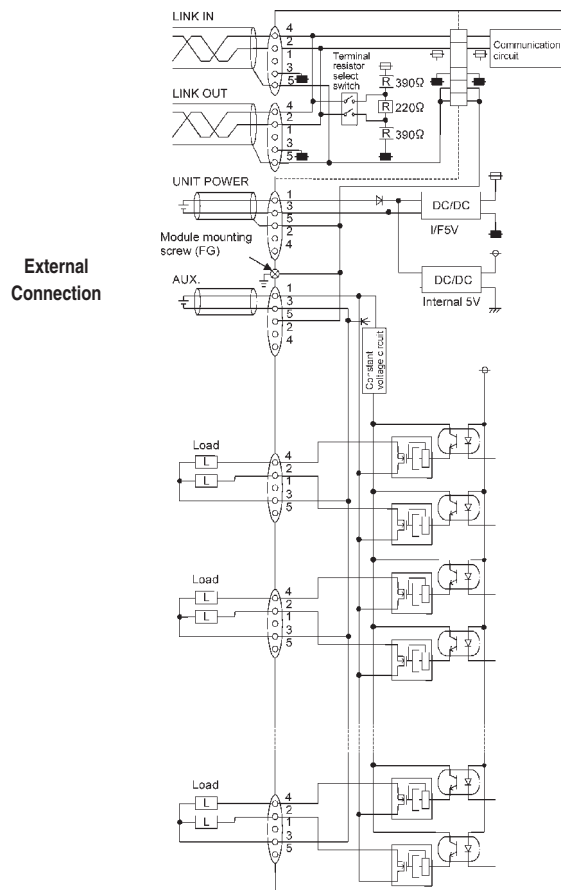
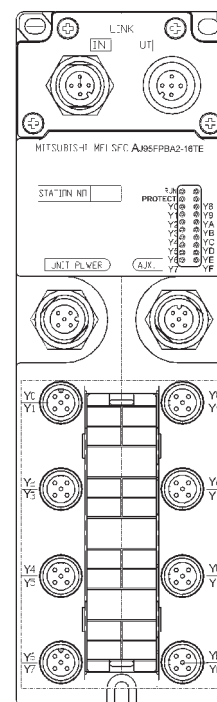


Communication Connector					
Pin. Number	LINK IN	LINK OUT			
1	Vacant	Vacant			
2	RxD/TxD(N)	RxD/TxD(N)			
3	DGND	DGND			
4	RxD/TxD(P)	RxD/TxD(P)			
5	Shield	Shield			
Power Supply Connector					
Pin. Number	Unit Power				
1	+24V				
2	Vacant				
3	24G				
4	Vacant				
5	FG				
I/O Connector					
Pin No.		Signal Name	Pin No.	Signal Name	
X0/X1	1	+24V	X8/X9	1	+24V
	2	X1		2	X9
	3	24G		3	24G
	4	X0		4	X8
	5	Vacant		5	Vacant
X2/X3	1	+24V	XA/XB	1	+24V
	2	X3		2	XB
	3	24G		3	24G
	4	X2		4	XA
	5	Vacant		5	Vacant
X4/X5	1	+24V	XC/XD	1	+24V
	2	X5		2	XD
	3	24G		3	24XG
	4	X4		4	XC
	5	Vacant		5	Vacant
X6/X7	1	+24V	XE/XF	1	+24V
	2	X7		2	XF
	3	24G		3	24G
	4	X6		4	XE
	5	Vacant		5	Vacant

## Profibus-DP Waterproof Source Transistor Output Module, 2 Wire, M12 Connector

Specifications		AJ95FPBA2-16TE
Certification		UL • cUL • CE
Number of Output Points		16 points
Isolation Method		Photocoupler
Rated Load Voltage		12 / 24 VDC
Operating Load Voltage Range		10.2 to 26.4 VDC (ripple ratio within 5%)
Max. Load Current		0.1A / point; 4.0 A/1 common
Max. Load Inrush Current		2.0A 10ms or lower
Leakage Current at OFF		0.3 mA or lower
Max. Voltage Drop at ON		0.15 VDC or lower (TYP) 1.0A; 0.2 VDC or lower (MAX) 0.1A
Output Method		Source type with protection (thermal, short circuit)
Response Time	OFF→ON	0.5 ms or lower
	ON→OFF	1.5 ms or lower (resistive load)
External Power Supply for Output	Voltage	10.2 to 28.8 VDC (ripple ratio: within 5%)
	Current	25 mA or lower (24 VDC/all pts. ON) Not including external load current
Common Wiring Method		16 points / 1 common (waterproof connector 2 wire type)
Surge Suppressor		Zener diode
Number of Stations Occupied		1 station
I/O Module Power Supply	Voltage	20.4 to 26.4 VDC (ripple ratio: within 5%)
	Current	75mA or lower (when 24 VDC and all points are ON)
Noise Durability		DC type noise voltage 500Vp-p, noise width 1 μs, noise carrier frequency 25 to 60Hz (noise simulator condition)
Dielectric Withstand Voltage		500 VAC for 1 minute between all DC external terminals and ground
Insulation Resistance		10 MΩ or higher, measured with a 500 VDC insulation resistance tester
Weight kg (lbs)		0.40 (0.88)
Required Manual		AJ95FPBA2-16TE User's Manual • IB(NA)0800221 (Included)
Dimensions (W x H x D) mm (in)		60 (2.56) x 192 (7.76) x 48 (1.89)

### Appearance

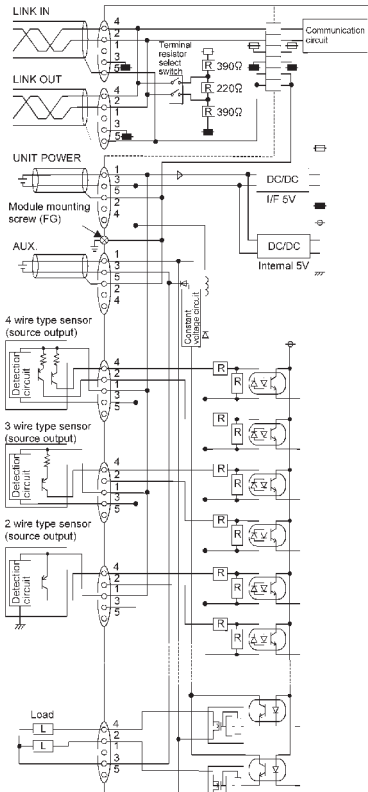


Communication Connector					
Pin. Number	LINK IN		LINK OUT		
1	Vacant		Vacant		
2	Rx/D/Tx/D(N)		Rx/D/Tx/D(N)		
3	DGND		DGND		
4	Rx/D/Tx/D(P)		Rx/D/Tx/D(P)		
5	Shield		Shield		
Power Supply Connector					
Pin. Number	Unit Power		AUX		
1	+24V		+24V		
2	Vacant		Vacant		
3	24G		24G		
4	Vacant		Vacant		
5	FG		FG		
I/O Connector					
Pin No.		Signal Name	Pin No.	Signal Name	
Y0/Y1	1	Vacant	Y8/Y9	1	Vacant
	2	Y1		2	Y9
	3	24G		3	24G
	4	Y0		4	Y8
	5	Vacant		5	Vacant
Y2/Y3	1	Vacant	YA/YB	1	Vacant
	2	Y3		2	YB
	3	24G		3	24G
	4	Y2		4	YA
	5	Vacant		5	Vacant
X4/X5	1	Vacant	YC/YD	1	Vacant
	2	Y5		2	YD
	3	24G		3	24G
	4	Y4		4	YC
	5	Vacant		5	Vacant
Y6/Y7	1	Vacant	YE/YF	1	Vacant
	2	Y7		2	YF
	3	24G		3	24G
	4	Y6		4	YE
	5	Vacant		5	Vacant



# Profibus-DP Waterproof Source Transistor Input/Source Transistor Output Module, 4 Wire Input, 2 Wire Output, M12 Connector

Specifications		AJ95FPBA42-16DTE			
Certification		UL • cUL • CE			
INPUT SPECIFICATION		OUTPUT SPECIFICATION			
Number of Input Points		8 points	Number of Output Points	8 points	
Isolation Method		Photocoupler	Isolation Method	Photocoupler	
Rated Input Voltage		24 VDC	Rated Load Voltage	12/24 VDC	
Rated Input Current		Approx. 7mA	Operating Load Volt. Range	10.2 to 28.8 VDC (ripple range ± 5%)	
Operating Voltage Range		20.4 to 26.4 VDC (ripple ratio: within ±5%)	Max Load Current	1.0 A / point, : 4.0A/1 common	
Max. Simultaneous on Input Points		100%	Max Inrush Current	2.0A 10 msec or lower	
ON Voltage/ON Current		14 V or higher / 35 mA or higher	Leakage Current at OFF	0.3 mA or lower	
OFF Voltage/OFF Current		6 V or lower / 1.7 mA or lower	Max. Voltage Drop at ON	0.15 VDC or lower (TYP) 1.0A 0.2 VDC or lower (MAX) 1.0A	
Input Resistance		Approx. 3.3Ω	Output Form	Source type with protection (thermal, short circuit)	
Response Time	OFF→ON	1.5 ms or lower (when 24 VDC)	Response Time	OFF→ON	0.5 msec or lower
	ON→OFF	1.5 ms or lower (when 24 VDC)		ON→OFF	1.5 msec or lower (resistive load)
			External Power Supply / Output	Voltage	10.2 to 28.8 VDC (ripple rate within 5%)
				Current	15mA or lower (24 VDC all pts. ON.) Not including external load current
Input Form		Source type	Surge Suppression		Zener diode
Common Wiring Method		8 points / 1 common (waterproof connector 2 to 4 wire type)	Common Wiring Method		8 points / 1 common (waterproof connector 2 wire type)
No. of Stations Occupied		1 station			
I/O Module Power Supply	Voltage	20.4 to 26.4 VDC (ripple rate within 5%)			
	Current	70 mA or lower (at 24 VDC app pts. ON)			
Noise Durability		DC type noise voltage 500V p-p According to the noise simulator of noise frequency 25 to 60Hz, noise width 1 μs			
Dielectric Withstand Voltage		500 VAC for 1 minute between all DC external terminals and ground			
Insulation Resistance		10 MΩ or higher, measured with 500 VDC insulation resistance tester			
Weight kg (lbs)		0.40			
Required Manual		AJ95FPBA42-16DTE User's Manual • IB(NA)0800222 (Included)			
Dimensions (W x H x D) mm (in)		60 (2.56) x 192 (7.76) x 48 (1.89)			

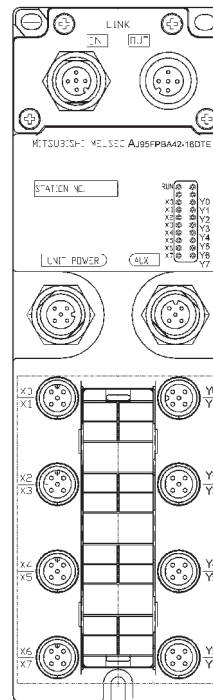


LINK IN  
M12 male connector

LINK OUT  
M12 female connector

UNIT POWER/AUX.  
M12 male connector

I/O connector  
M12 female connector



Communication Connector			
Pin. Number	LINK IN	LINK OUT	
1	Vacant	Vacant	
2	RxD/TxD(N)	RxD/TxD(N)	
3	DGND	DGND	
4	RxD/TxD(P)	RxD/TxD(P)	
5	Shield	Shield	
Power Supply Connector			
Pin. Number	Unit Power	AUX.	
1	+24V	+24V	
2	Vacant	Vacant	
3	24G	24G	
4	Vacant	Vacant	
5	FG	FG	
I/O Connector			
Pin No.	Signal Name	Pin No.	Signal Name
X0/X1	1 +24V	1	Vacant
	2 X1	2	Y1
	3 24G	3	24G
	4 X0	4	Y0
	5 Vacant	5	Vacant
X2/X3	1 +24V	1	Vacant
	2 X3	2	Y3
	3 24G	3	24G
	4 X2	4	Y2
	5 Vacant	5	Vacant
X4/X5	1 +24V	1	Vacant
	2 X5	2	Y5
	3 24G	3	24XG
	4 X4	4	Y4
	5 Vacant	5	Vacant
X6/X7	1 +24V	1	Vacant
	2 X7	2	Y7
	3 24G	3	24G
	4 X6	4	Y6
	5 Vacant	5	Vacant



## Profibus Bus I/O:

### Profibus-DP Bus Node Module

The modular format of the MT Profibus I/O modules allows greater flexibility in tailoring a mixture of I/O types to your application.

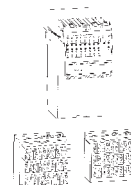
#### Special Features:

- The bus module connects all I/O modules to the network.
- 0.5 transistor output modules.

- 2A relay output.
- Isolation between the I/O and network.
- Screw terminal or spring clamp type terminals.
- Two selectable types of connecting terminals: screw type and cache clamp terminals.

Specifications		MT-DP12
Certification		CE
Module Type		MT I/O bus module, Profibus-DP slave
Communications	Protocol	DIN 19245-T3
	Medium	Shielded twisted-pair 24AWG (0.22 mm <sup>2</sup> ), impedance: 100 – 130 Ω; Shielded twisted-pair (22AWG = 0.34 mm <sup>2</sup> ), impedance: 135 – 165 Ω
Interface		RS-485
Operation Modes		Sync mode and freeze mode are supported
Communications Rate		9.6; 19.2; 93.75; 187.5; 500 kbit/s, 1.5; 3; 6; 12 Mbit/s
Max. Total Distance (m)		4800 (3 repeaters)
No. of Connectable I/O Modules		16, including up to 4 analog I/O modules
Addressable Digital I/Os		192
I/O Points		—
Applicable Wire Size (mm <sup>2</sup> )		0.75 – 2.5
Power Supply (VDC)		24
Internal Current Consumption (24 VDC)		500 mA (max.)
Weight (kg)		0.28 (0.62)
Dimensions (W x H x D) mm		96 (3.78) x 114 (4.49) x 60 (2.36)
Optional Accessories		Local system adapter MT-LE with extension cable MT-LE-CBL50 (length 0.5 m) = MT-LE-SET Screw type terminal block MT-DP12-TBS; Cache clamp terminal block MT-DP12-TBC, PROFIBUS 9-pin D-SUB plug connector for up to 12 Mbaud: ProfiCon.
Required Manual		IB(NA)6610 Not included (purchase separately) Profibus MT Series Manual. Covers all MT type bus style Profibus I/O

Note: Many of these manuals are available by free download from our website, [www.meau.com](http://www.meau.com)



### Profibus-DP Bus I/O

Choose from 4, 8 or 16 point I/O modules to accurately tailor the I/O system to your application.

Specifications		MT-X8	MT-X16	MT-Y8T	MT-Y16T	MT-Y8T2	MT-Y4R
Certification		CE	CE	CE	CE	CE	CE
Inputs		8, source	16, source	—	—	—	—
Outputs		—	—	8	16	8	4
Output Type		—	—	Source Transistor	Source Transistor	Source Transistor	Relays
Common Terminal Arrangement		—	—	8	8	4	1
Isolation		By optocoupler					
Input Voltage (Sensor Supply)		24 VDC (±25%)	24 VDC (±25%)	—	—	—	—
Output Voltage Range		—	—	24 VDC (-1%)	24 VDC (-1%)	24 VDC (-0.5%)	24/110/220 VAC/DC
Max. Switching Voltage		—	—	30 VDC	30 VDC	30 VDC	220 VAC
Rated Input Current (A)		0.7	0.7	—	—	—	—
Max. Current	Per Output (A)	—	—	0.5	0.5	2	2A (24/110/220 VAC) 0.25A (110 VDC) 0.1A (220 VDC)
	Per Group (A)	—	—	2.5	2.5	10	—
Leakage Current at OFF		—	—	<50 μA	<50 μA	6 μA	—
Response Time	OFF→ON (ms)	≤1	≤1	≤0.14	≤0.14	0.3	10 ms
	ON→OFF (ms)	≤1	≤1	≤0.05	≤0.05	≤0.08	5 ms
Shortcut Protection		Electronic	Electronic	Electronic	Electronic	Electronic	—
Status Display for Outputs		—	—	All modules have one or two status LEDs per output			
Error Indicator		LED	LED	LED	LED	—	—
Connection Terminal		All modules can be fitted with screw type or cache clamp terminal blocks (see accessories)					
Applicable Wire Size (mm <sup>2</sup> )		0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5
External Sensor Supply		—	24 VDC (≤30 mA)	24 VDC (≤20 mA)	24 VDC (≤20 mA)	24 VDC (≤20 mA)	24 VDC (≤20 mA)
Internal Power Consumption (8 VDC) mA		25	30	35	60	35	45
Weight kg (lb)		0.16 (0.35)	0.17 (0.37)	0.16 (0.35)	0.16 (0.35)	0.18 (0.40)	0.175 (0.39)
Dimensions (W x H x D) mm (in)		56(2.20) x 114 (4.49) x 60 (2.36)					
Accessories*	Terminal Blocks (Order separately)	MT-X8-TBS MT-X8-TBC	MT-X16-TBS MT-X16-TBC MT-X16-PTBS MT-X16-PTBC	MT-Y8T-TBS MT-Y8T-TBC	MT-Y16T-TBS MT-Y16T-TBC MT-Y16T-PTBS MT-Y16T-PTBS	MT-Y8T2-TBS MT-Y8T2-TBC	MT-Y4R-TBS MT-Y4R-TBC

\* Guide to terminal block types: TBS = I/O screw terminals, TBC = I/O spring clamp terminals, PTBS = I/O screw type terminals with additional terminals for supplying power to I/O devices, PTBC = I/O spring clamps with additional terminals for supplying power to I/O devices.

## Profibus-DP Analog I/O Modules

The MT modular system also allows you to flexibly incorporate analog as well as digital I/O into your Profibus system.

### Special Features:

- 4 separately parameterizable channels per module.
- Voltage, current, and temperature input can be set via parameter.
- With the analog input module, current, voltage, and PT100 inputs can be operated in parallel.
- Two selectable types of connecting terminals: screw type and spring clamp terminals.
- Standard potential isolation between network and I/O.

Specifications		MT-4AD-N	MT-4DAV
Certification		CE	CE
Module Type		Analog input module	Analog output module
Number of Channels		4	4
Analog Input		-10 V – +10 V, -20 mA – +20 mA, 4 – 20 mA, -180 – +600 °C (PT100)	—
Digital Output		16 bits binary (incl. sign)	—
Digital Input		—	16 bits binary (incl. sign)
Analog Output		—	0 – 10 VDC
Input Resistance	Voltage (k $\Omega$ )	176	—
	Current ( $\Omega$ )	approx. 50	—
Max. Output Load		—	$\geq 750\Omega$
I/O Characteristics		<b>Analog Input</b>	<b>Digital Output</b>
		-10 to +10 V	-4000 to +4000
		-20 to +20mA	-4000 to +4000
		4 to 20mA	0 to +4000
		-180 to +600°C	-1800 to +6000
			0 –4000
			0 –10V
Max. Resolution		-10 to +10 V	approx. 2.5mV
		-20 to +20mA	approx. 5 $\mu$ A
		4 to 20mA	approx. 4 $\mu$ A
		-180 to +600 °C	approx. 0.125 °C
			—
			2.5mV
Max. Conversion Time		50 ms/channel	1 ms/channel
Isolation		Optocoupler isolation	Optocoupler isolation
Connection Terminal		Both modules can be fitted with screw type or spring clamp terminal blocks (see accessories).	
Applicable Wire Size mm <sup>2</sup>		0.75 – 2.5	0.75 – 2.5
Internal Power Consumption (8 VDC) mA		80	60
Weight kg (lb)		0.225 (0.50)	0.22 (0.50)
Dimensions (W x H x D) mm (in)		76 x 114 x 60	
Accessories (Order Separately)		Screw type terminal block MT-4AD-TBS-S1	Screw type terminal block MT-4DAV-TBS
		Spring clamp terminal block MT-4AD-TBC-S1	Spring clamp terminal block MT-4DAV-TBC

## CC-Link/LT

CC-Link/LT offers a cost effective way to network small groups of digital I/O for applications such as in-panel wiring and similar uses.

### Key features:

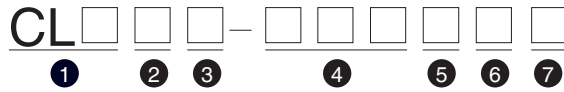
- Attach wiring to I/O blocks with no cutting or stripping of cable: devices simply clip on to the cable, leading to significant labor and material cost savings.
- Fast communication speed.
- Up to 1024 I/O per segment.
- Fine granularity of I/O allows placement of small quantities of I/O where required.
- Can be connected to an existing CC-Link network via the AJ65SBT-CLB bridge module.

## Required Manuals

Manual Part Number	Description		Included?
IB(NA)0800232	QJ61CL12	User's Manual (Hardware)	Yes
SH(NA)080351		User's Manual	No
IB(NA)0800240E	AJ65SBT-CLB	User's Manual (Hardware)	Yes
SH(NA)080362E		User's Manual	No
JY997D04101	CL1X4-D1B2	User's Manual	Yes
JY997D04201	CL1Y4-T1B2	User's Manual	Yes
JY997D04301	CL1Y4-R1B2	User's Manual	Yes
JY997D05501	CL1Y4-R1B1	User's Manual	Yes
JY997D05601	CL1XY4-DT1B2	User's Manual	Yes
JY997D05701	CL1XY4-DR1B2	User's Manual	Yes
IB(NA)0800233E	CL2X8-D1B2	User's Manual (Hardware)	Yes
IB(NA)0800234E	CL2Y8-TP1B2	User's Manual (Hardware)	Yes
JY997D04401	CL1XY8-DT1B2	User's Manual	Yes
JY997D04501	CL1XY8-DR1B2	User's Manual	Yes
IB(NA)0800256E	CL2X8-D1S2	User's Manual (Hardware)	Yes
IB(NA)0800257E	CL2Y8-TP1S2	User's Manual (Hardware)	Yes
JY997D10801	CL1X4-D1S2	User's Manual	Yes
JY997D10901	CL1Y4-T1S2	User's Manual	Yes
IB(NA)0800235E	CL2X8-D1C3V	User's Manual (Hardware)	Yes
IB(NA)0800236E	CL2Y8-TP1C2V	User's Manual (Hardware)	Yes
IB(NA)0800258E	CL2X16-D1C3V	User's Manual (Hardware)	Yes
IB(NA)0800259E	CL2Y16-TP1C2V	User's Manual (Hardware)	Yes
IB(NA)0800260E	CL2XY16-DTP1C5V	User's Manual (Hardware)	Yes
JY997D10601	CL1X4-D1C3	User's Manual	Yes
JY997D10701	CL1Y4-T1C2	User's Manual	Yes
IB(NA)0800264E	CL2TE-5	User's Manual (Hardware)	Yes
IB(NA)0800265E	CL2TE-10S	User's Manual (Hardware)	Yes
IB(NA)0800237E	CL2X16-D1M1V	User's Manual (Hardware)	Yes
IB(NA)0800238E	CL2Y16-TP1M1V	User's Manual (Hardware)	Yes
JY997D03901	CL1X2-D1D3S	User's Manual	Yes
JY997D04001	CL1Y2-T1D2S	User's Manual	Yes
JY997D03801	CL1XY2-DT1D5S	User's Manual	Yes
JY997D09901	CL1-HLD	User's Manual (Hardware)	Yes
JY997D04601	CL1PAD1	User's Manual	Yes
JY997D06601		User's Manual (Detailed)	No
JY997D09801	CL1PSU-2A	User's Manual	Yes
JY997D05901	CL1XY8-DTE1B2	User's Manual	Yes
JY997D06301	CL1XY2-DTE1D5S	User's Manual	Yes
JY997D06501	CL1Y2-TE1D2S	User's Manual	Yes
JY997D05801	CL1Y4-TE1B2	User's Manual	Yes
IB(NA)0800289E	CL2AD4-B	User's Manual (Hardware)	Yes
SH(NA)080417E		User's Manual	No
IB(NA)0800290E	CL2DA2-B	User's Manual (Hardware)	Yes
SH(NA)080418E		User's Manual	No

## Guide to CC-Link/LT I/O

This section presents the current line-up of CC-Link/LT I/O blocks. For the network master modules, please refer to the appropriate controller section. Before using this guide, please read the following guide to nomenclature:



① Unit for CC-Link/LT  
□ : 1 or 2

② Unit type  
X: Input  
Y: Output  
XY: I/O hybrid

③ Total number of I/O points  
2: 2 points  
4: 4 points  
8: 8 points  
16: 16 points

④ I/O specifications  
D1: 24VDC input  
R1: Relay output 2A  
T1: Transistor output 0.1A  
TP1: Transistor output 0.1A  
(with output protection)  
DT1: 24VDC input/  
transistor output 0.1A  
DR1: 24VDC input/  
relay output 2A

⑤ Connection form  
B: Terminal block  
C: Sensor connector  
M: MIL connector  
D: Cable type

⑥ Wire type  
1: 1-wire type  
2: 2-wire type  
3: 2- or 3-wire type  
5: Input 2 or 3-wire type, output 2-wire type

⑦ Shape  
S: Ultracompact  
V: Vertical type  
None: Normal type  
(horizontal type)

### Note on "1-wire", "2-wire" & "3-wire" terminology

Throughout the CC-Link/LT blocks, we reference these terms. These are concise definitions for the following ways to connect I/O devices:

- **1 wire:** One side of the load is connected to the I/O module terminal block. The other side is connected to a common terminal shared by all devices.
- **2 wire:** One side of the load is connected to the I/O module terminal block. The other side is connected to a dedicated common terminal for that load on the terminal block. Note that in some cases, the common terminals may be connected internally.
- **3 wire:** The I/O block is configured to accept loads with three connections (such as various types of sensor, etc)

### CC-Link/LT Accessories

The following connectors and cable for CC-Link/LT are available:

**NOTE: ALL CONNECTORS AND ACCESSORIES ARE SOLD SEPARATELY. PLEASE INSURE YOU HAVE ALL NECESSARY CONNECTORS BEFORE BEGINNING AN INSTALLATION.**

Product		Model Number	Description	Quantity Per Box	AWG
Dedicated Flat Cable		CL9-FL4-18-*	Where * = length (sold by the meter)	10 m	N/A
Connector		CL9-CNF-18		10	N/A
Terminating Resistor		CL9-RYVK		2	N/A
Open Sensor Connector	A Type Plug (*1)	ECN-A014R	Red	20	28 - 24
		ECN-A004Y	Yellow	20	24 - 22
		ECN-A024BL	Blue	20	22 - 20
	A Type Receptacle (*1)	ECN-A104	Panel / Wall mounting type	20	N/A
		ECN-A154	Relay connection type	20	N/A
	M Type Plug (*1)	ECN-M014R	Red	20	26 - 24
		ECN-M024Y	Yellow	20	26 - 24
		ECN-M034OR	Orange	20	26 - 24
		ECN-M044GN	Green	20	22 - 20
		ECN-M054BL	Blue	20	22 - 20
		ECN-M064GY	Gray	20	22 - 20
	M Type Receptacle (*1)	ECN-M114R	Red	20	26 - 24
		ECN-M124Y	Yellow	20	26 - 24
		ECN-M134OR	Orange	20	26 - 24
		ECN-M144GN	Green	20	22 - 20
		ECN-M154BL	Blue	20	22 - 20
		ECN-M164GY	Gray	20	22 - 20
	MIL Type (*2)	—	Available from 3rd parties	—	—

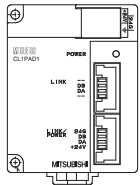
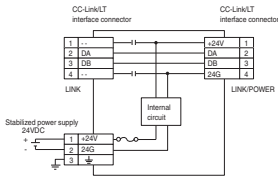
#### Notes:

1. Use with CLXXX-XXCXXX type blocks
2. Use with CLXXX-XXXMXXX type blocks

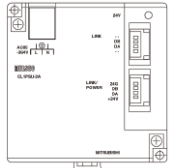
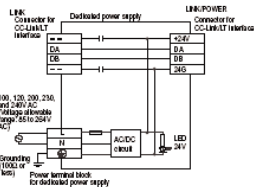
CC-Link/LT Power Supply Adapter

CC-Link/LT requires 24VDC power to be supplied to the network. The two options for doing this are the CL1PAD1 and the CL1PSU-2A. CL1PAD1 allows network power to be derived from a 24VDC supply, whereas the CL1PSU-2A allows a 120VAC supply to be used.

Specifications	CL1PAD1
Certification	UL • cUL
Maximum Input Voltage	28.8VDC
Maximum Input Current	5.0A
Insulation Resistance	10MΩ across input-FG by 500VDC insulation resistance tester
External Connection System	CL1PAD1 to external PSU: screw terminals CL1PAD1 to CC-Link/LT network: CL9-CNF-18 connectors to network cable.
Dimensions (W x H x D) mm (in)	66 x 85 x 90 (2.5 x 3.3 x 3.5)

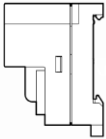
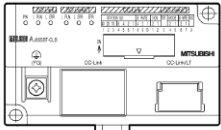


Specifications		CL1PSU-2A
Input	Rated Voltage	100, 120, 200, 230, and 240V AC
	Voltage Allowable Range	85 to 264V AC
	Rated Current	1.2A / 100V AC 0.7A / 200V AC
	Rated Frequency	50 or 60Hz
	Power Fuse	3.15A
	Inrush Current	Max. 50A / 100V AC Max. 60A / 200
	Output Voltage	24V DC +10 %/-5 %
Output	Output Current	0.01A to 2A Derating occurs according to the ambient temperature and power voltage. [Use the module in a proper range so that the total current consumption of each module does not exceed 2A (except the period immediately after the power is turned on).]
	Ripple Noise	500mVp-p or below
Noise Resistance		By noise simulator of 1000Vp-p in noise voltage, 1 s in noise width, and 25 to 60Hz in frequency



CC-Link/LT to CC-Link Bridge Module

The AJ65SBT-CLB allows a CC-Link/LT network segment to be connected to a CC-Link network. The module uses the A6CON-L5P & A6CON-LJ5P network connectors.



Model		AJ65SBT-CLB		
CC-Link				
Station Type		Remote device station		
Number Of Occupied Stations		Selected between 2, 4 and 8 stations *When 2 stations are selected: 64 points for each of RX/Ry (16 points used by the system), 8 words for each of RWr/RWw		
		When 4 stations are selected: 128 points for each of RX/Ry (16 points used by the system), 16 words for each of RWr/RWw		
		When 4 stations are selected: 128 points for each of RX/Ry (16 points used by the system), 16 words for each of RWr/RWw		
		When 8 stations are selected: 256 points for each of RX/Ry (32 points used by the system), 32 words for each of RWr/RWw		
CC-Link/LT				
Number Of CC-Link Occupied Stations		2 stations occupied	4 stations occupied	8 stations occupied
Maximum Number of CC-Link/LT Connected Stations	4-Points Mode	12 stations	28 stations	56 stations
	8-Points Mode	6 stations	14 stations	28 stations
	16-Points Mode	3 stations	7 stations	14 stations
Remote Station Numbers		1 to 56		
Bridge Station Connection Position		Connected at the end of the trunk line		

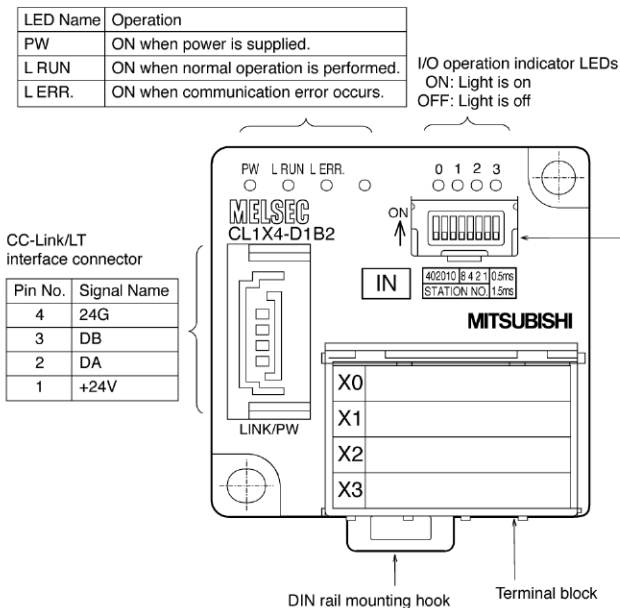
Note: When 8 stations are occupied make parameter setting so that two 4-station occupying modules are consecutively connected.



## Performance Specifications: Screw Terminal Modules

Input Module Model Name	Input Type		Number Of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time				External Connection Wire Type	Common Connection	Internal Current Consumption			
						On Voltage	Off Voltage	OFF-ON		ON-OFF							
CL1X4-D1B2	DC	+COM/-COM	4	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/1.5ms max		0.5ms/1.5ms max		Two wire	4 points/common	40mA			
CL2X8-D1B2	DC	+COM/-COM	8	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/1.5ms max		0.5ms/1.5ms max		Two wire	8 points/common	40mA			
Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption			
						1 Point	1 Common	OFF-ON	ON-OFF								
CL1Y4-T1B2	Transistor	Sink	4	Photocoupler	12/24VDC	0.1A	0.4A	1.0ms	1.0ms	0.1mA	Zener diode	Two wire	4 points/common	60mA			
CL1Y4-R1B2	Relay		4	Mechanical	250VAC/30VDC	2A	4A	10ms	10ms	N/A	N/A	Two wire	4 points/common	65mA			
CL1Y4-R1B1	Relay		4	Mechanical	250VAC/30VDC	2A	2A	10ms	10ms	N/A	N/A	One wire	1 point/common	65mA			
CL2Y8-TP1B2	Transistor	Sink	8	Photocoupler	12/24VDC	0.1A	0.8A	0.5ms	0.5ms	0.1mA	Zener diode	Two wire	8 points/common	40mA			
Combined I/O Module Model Name	I/O Type		Number of I/O Points	Isolation Method	Input/Load Voltage	Input Response Time	Maximum Output Load Current		Input Operating Voltage		Output Response Time		Leakage Current	Surge Suppression	Connection Wire Type on Input/ Output Sides	Common Connection	Internal Current Consumption
							1 Point	1 Common	On Voltage	Off Voltage	OFF-ON	ON-OFF					
CL1XY4-DT1B2	DC input/ transistor output	+COM/ -COM/sink	2/2	Photocoupler/ photocoupler	24VDC/ 24VDC & 12VDC	1.5ms	0.1A	0.2A	19VDC min	11VDC max	1.0ms	1.0ms	0.1mA	Zener diode	Two wire/ two wire	2 points/ common/ 2 points/ common	55mA
CL1XY4-DR1B2	DC input/ relay output	+COM/ -COM	2/2	Photocoupler/ mechanical	24VDC/ 250VAC & 30VDC	1.5ms	2A	4A	19VDC min	11VDC max	10ms	10ms	N/A	N/A	Two wire/ two wire	2 points/ common/ 2 points/ common	60mA
CL1XY8-DT1B2	DC input/ transistor output	+COM/ -COM/sink	4/4	Photocoupler/ photocoupler	24VDC/ 24VDC & 12VDC	1.5ms	0.1A	0.4A	19VDC min	11VDC max	1.0ms	1.0ms	0.1mA	Zener diode	Two wire/ two wire	4 points/ common/ 4 points/ common	65mA
CL1XY8-DR1B2	DC input/ relay output		4/4	Photocoupler/ mechanical	24VDC/ 250VAC & 30VDC	1.5ms	2A	4A	19VDC min	11VDC max	10ms	10ms	N/A	N/A	Two wire/ two wire	4 points/ common / 4 points/ common	70mA

## Guide to Module Features



### DIP switches

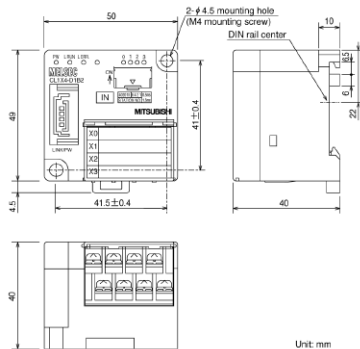
Setting	Switch Name	ST.No.	Description
Station number setting switches	STATION NO.	1	Tenth
		2	digit
		3	Unit
		4	digit
		5	Unit
		6	digit
		7	Unit
I/O operation setting	0.5ms	8	Input unit: Response speed setting OFF: 1.5ms (standard type) ON: 0.5ms (fast response type)
	1.5ms		Output unit: Hold function setting OFF: Output clear ON: Output held I/O hybrid unit: Hold function setting OFF: Output clear ON: Output held

The DIP switches are at factory-default settings (OFF).

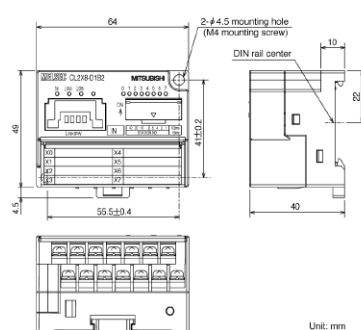


## External Dimensions

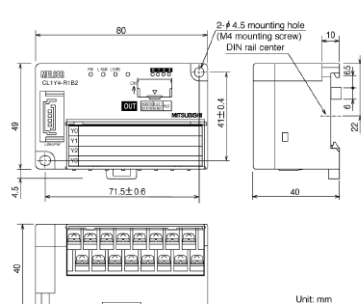
CL1X4-D1B2  
CL1Y4-T1B2



CL2X8-D1B2  
CL2Y8-TP1B2

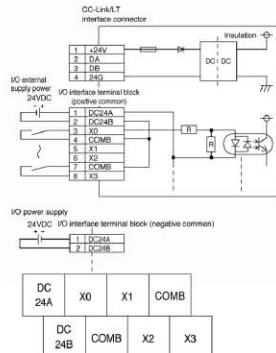


CL1Y4-R1B2 • CL1Y4-R1B1  
CL1XY4-DT1B2 • CL1XY4-DR1B2  
CL1XY8-DT1B2 • CL1XY8-DR1B2

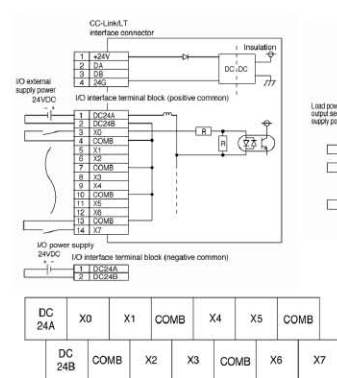


## External Connections

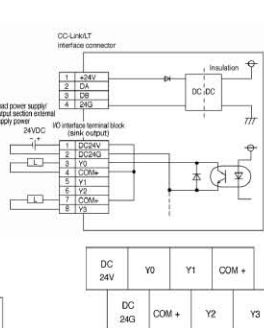
CL1X4-D1B2



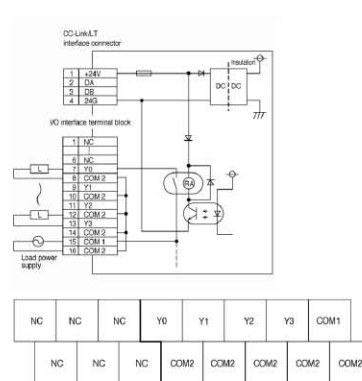
CL2X8-D1B2



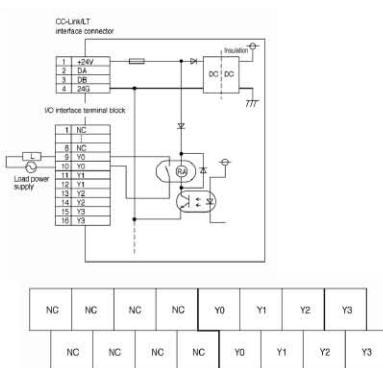
CL1Y4-T1B2



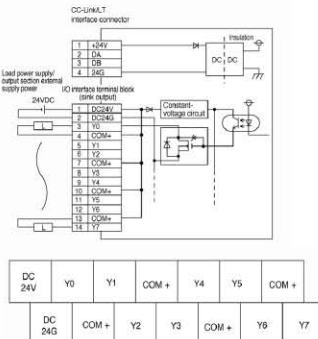
CL1Y4-R1B2



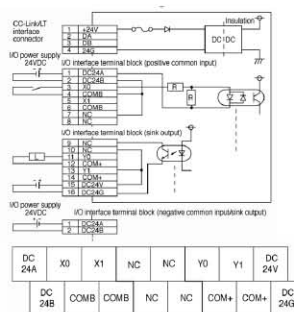
CL1Y4-R1B1



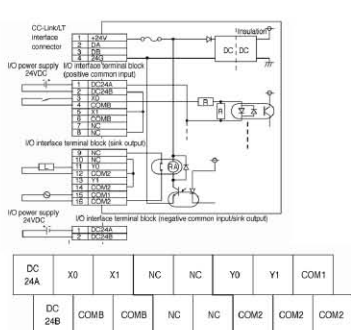
CL2Y8-TP1B2



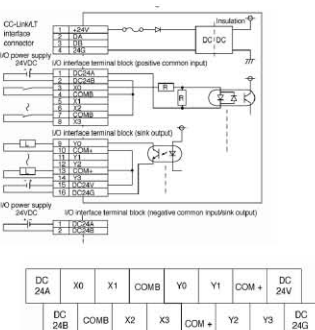
CL1XY4-DT1B2



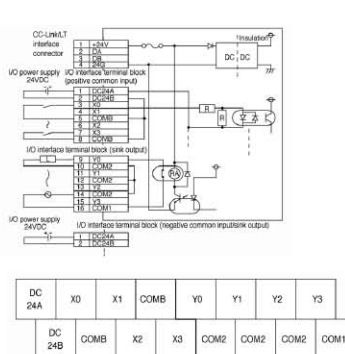
CL1XY4-DR1B2



CL1XY8-DT1B2



CL1XY8-DR1B2

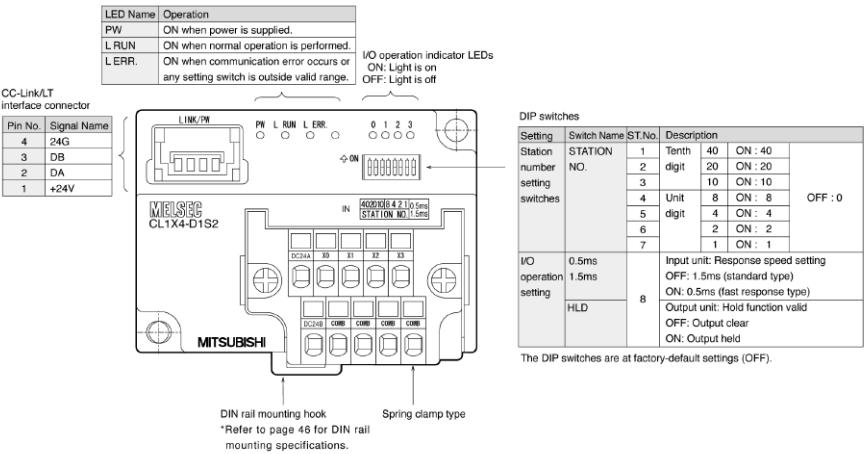




Performance Specifications: Spring Clamp Modules

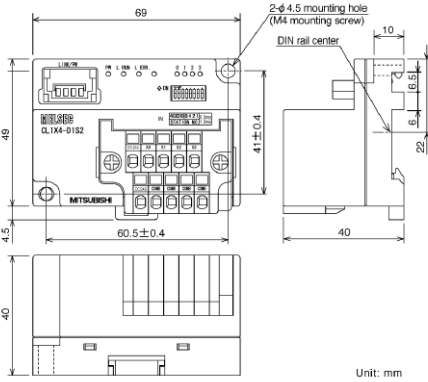
Input Module Model Name	Input Type		Number Of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Internal Current Consumption		
						On Voltage	Off Voltage	OFF-ON	ON-OFF					
CL1X4-D1S2	DC	+COM/-COM	4	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/ 1.5ms max	0.5ms/1.5ms max	Two wire	4 points/common	40mA		
CL2X8-D1S2	DC	+COM/-COM	8	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/ 1.5ms max	0.5ms/1.5ms max	Two wire	8 points/common	40mA		
Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption
						1 Point	1 Common	OFF-ON	ON-OFF					
CL1Y4-T1S2	Transistor	Sink	4	Photocoupler	12/24VDC	0.1A	0.4A	1.0ms	1.0ms	0.1mA	Zener diode	Two wire	4 points/common	60mA
CL2Y8-TP1S2	Transistor	Sink	8	Photocoupler	12/24VDC	0.1A	0.8A	0.5ms	0.5ms	0.1mA	Zener diode	Two wire	8 points/common	40mA

Guide to Module Features



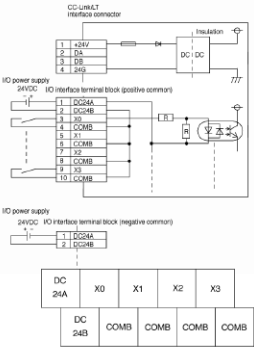
External Dimensions

CL1X4-D1S2 • CL1Y4-T1S2  
 CL2X8-D1S2 • CL2Y8-TP1S2

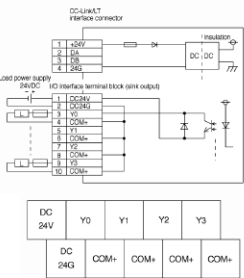


External Connections

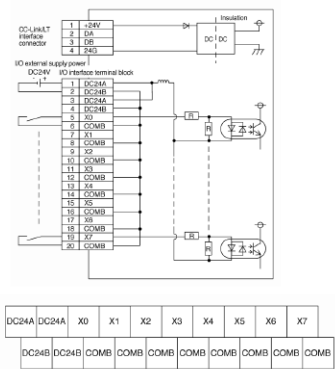
CL1X4-D1S2



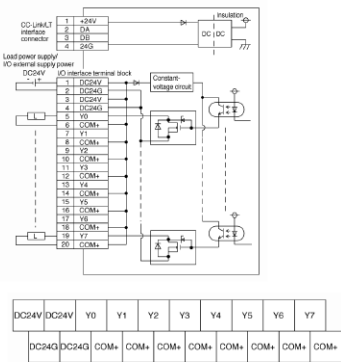
CL1Y4-T1S2



CL2X8-D1S2



CL2Y8-TP1S2



### Performance Specifications: e-CON (Sensor Connector Modules)

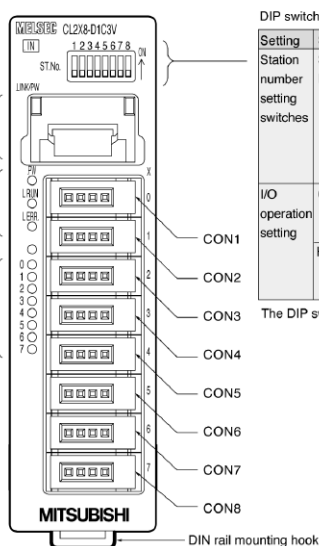
Input Module Model Name	Input Type		Number Of Input Points	Isolation Method		Rated Input Voltage		Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Internal Current Consumption			
								On Voltage	Off Voltage	OFF-ON	ON-OFF						
CL1X4-D1C3	DC	+COM	4	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/1.5ms max	0.5ms/1.5ms max	Two wire/three wire	4 points/common	35mA					
CL2X8-D1C3V	DC	+COM	8	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/1.5ms max	0.5ms/1.5ms max	Two wire/three wire	8 points/common	40mA					
CL2X16-D1C3V	DC	+COM	16	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/1.5ms max	0.5ms/1.5ms max	Two wire/three wire	16 points/common	45mA					
Output Module Model Name	Output Type		Number Of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption			
						1 Point	1 Common	OFF-ON	ON-OFF								
CL1Y4-T1C2	Transistor	Sink	4	Photocoupler	24VDC	0.1A	0.4A	1.0ms	1.0ms	0.1mA	Zener diode	Two wire	4 points/common	60mA			
CL2Y8-TP1C2V	Transistor	Sink	8	Photocoupler	24VDC	0.1A	0.8A	0.5ms	0.5ms	0.1mA	Zener diode	Two wire	8 points/common	45mA			
CL2Y16-TP1C2V	Transistor	Sink	16	Photocoupler	24VDC	0.1A	1.6A	0.5ms	0.5ms	0.1mA	Zener diode	Two wire	16 points/common	55mA			
Combined I/O Module Model Name	I/O Type		Number Of I/O Points	Isolation Method	Input/Load Voltage	Input Response Time	Maximum Output Load Current		Input Operating Voltage		Output Response Time		Leakage Current	Surge Suppression	Connection Wire Type on Input/Output Sides	Common Connection	Internal Current Consumption
						1 Point	1 Common	On Voltage	Off Voltage	OFF-ON	ON-OFF						
CL2XY16-DTP1C5V	DC input/ transistor output	+COM/sink	8/8	Photocoupler/ photocoupler	24VDC/ 24VDC	0.5ms/ 1.5ms	0.1A	0.8A	19VDC min	11VDC max	0.5ms	0.5ms	0.1mA	Zener diode	Two wire or three wire/ two wire	8 points/ common/ 8 points/ common	50mA

## Guide to Module Features

CC-Link/LT interface connector

Pin No.	Signal Name
1	+24V
2	DA
3	DB
4	24G

Operation indicator LEDs  
ON: Light is on  
OFF: Light is off

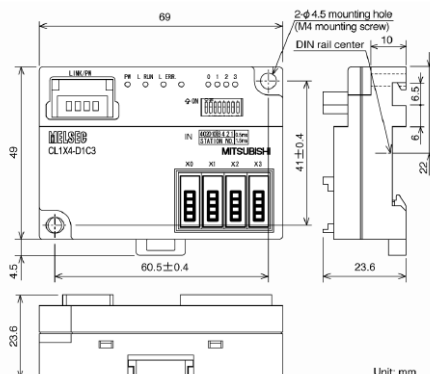


DIP switches						
Setting	Switch Name	ST.No.	Description			
Station number setting switches	STATION NO.	1	Tenth	40	ON : 40	OFF : 0
		2	digit	20	ON : 20	
		3		10	ON : 10	
		4	Unit	8	ON : 8	
		5	digit	4	ON : 4	
		6		2	ON : 2	
		7		1	ON : 1	
I/O operation setting	0.5ms 1.5ms	8	Input unit: Response speed setting OFF: 1.5ms (standard type) ON: 0.5ms (fast response type)			
	HLD		Output unit: Hold function valid OFF: Output clear ON: Output hold			

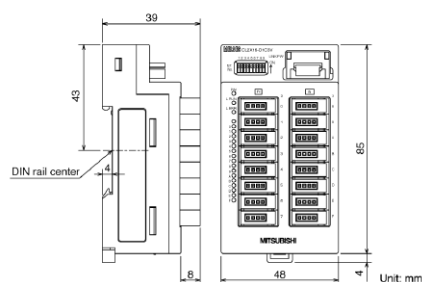
The DIP switches are at factory-default settings (OFF).

## External Dimensions

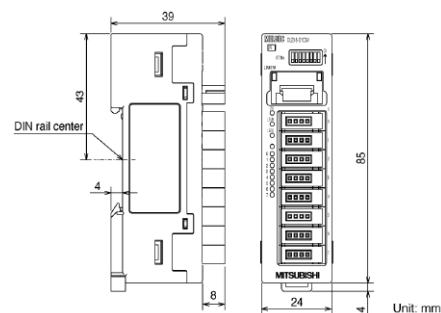
CL1X4-D1C3 • CL1Y4-T1C2



CL2X16-D1C3V • CL2Y16-TP1C2V  
CL2XY16-DTP1C5V

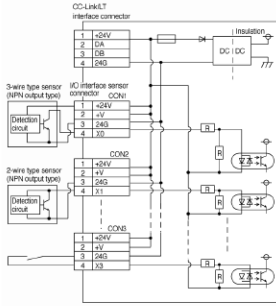


CL2X8-D1C3V



# External Connections

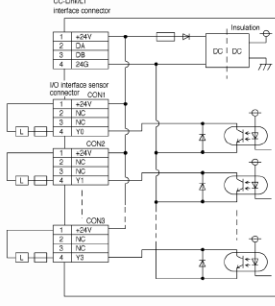
CL1X4-D1C3



I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON3-1	+24V
CON1-2	NC	CON3-2	NC
CON1-3	24G	CON3-3	24G
CON1-4	X0	CON3-4	X2
CON2-1	+24V	CON4-1	+24V
CON2-2	NC	CON4-2	NC
CON2-3	24G	CON4-3	24G
CON2-4	X1	CON4-4	X3

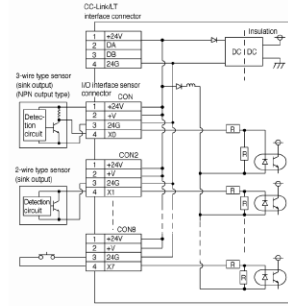
CL1Y4-T1C2



I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON3-1	+24V
CON1-2	NC	CON3-2	NC
CON1-3	24G	CON3-3	NC
CON1-4	Y0	CON3-4	Y2
CON2-1	+24V	CON4-1	+24V
CON2-2	NC	CON4-2	NC
CON2-3	NC	CON4-3	NC
CON2-4	Y1	CON4-4	Y3

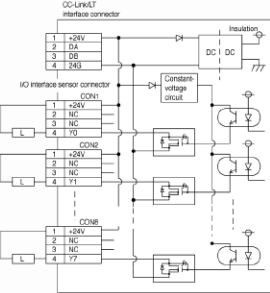
CL2X8-D1C3V



I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON5-1	+24V
CON1-2	NC	CON5-2	+V
CON1-3	24G	CON5-3	24G
CON1-4	X0	CON5-4	X4
CON2-1	+24V	CON6-1	+24V
CON2-2	NC	CON6-2	+V
CON2-3	24G	CON6-3	24G
CON2-4	X1	CON6-4	X5
CON3-1	+24V	CON7-1	+24V
CON3-2	+V	CON7-2	+V
CON3-3	24G	CON7-3	24G
CON3-4	X2	CON7-4	X6
CON4-1	+24V	CON8-1	+24V
CON4-2	+V	CON8-2	+V
CON4-3	24G	CON8-3	24G
CON4-4	X3	CON8-4	X7

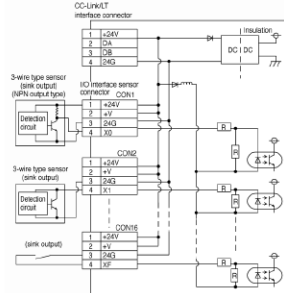
CL2Y8-TP1C2V



I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON5-1	+24V
CON1-2	NC	CON5-2	NC
CON1-3	NC	CON5-3	NC
CON1-4	Y0	CON5-4	Y4
CON2-1	+24V	CON6-1	+24V
CON2-2	NC	CON6-2	NC
CON2-3	NC	CON6-3	NC
CON2-4	Y1	CON6-4	Y5
CON3-1	+24V	CON7-1	+24V
CON3-2	NC	CON7-2	NC
CON3-3	NC	CON7-3	NC
CON3-4	Y2	CON7-4	Y6
CON4-1	+24V	CON8-1	+24V
CON4-2	NC	CON8-2	NC
CON4-3	NC	CON8-3	NC
CON4-4	Y3	CON8-4	Y7

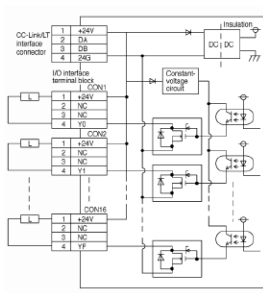
CL2X16-D1C3V



I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name	Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON5-1	+24V	CON9-1	+24V	CON13-1	+24V
CON1-2	NC	CON5-2	NC	CON9-2	NC	CON13-2	NC
CON1-3	NC	CON5-3	NC	CON9-3	NC	CON13-3	NC
CON1-4	Y0	CON5-4	Y4	CON9-4	Y8	CON13-4	YC
CON2-1	+24V	CON6-1	+24V	CON10-1	+24V	CON14-1	+24V
CON2-2	NC	CON6-2	NC	CON10-2	NC	CON14-2	NC
CON2-3	NC	CON6-3	NC	CON10-3	NC	CON14-3	NC
CON2-4	X1	CON6-4	X5	CON10-4	X9	CON14-4	XD
CON3-1	+24V	CON7-1	+24V	CON11-1	+24V	CON15-1	+24V
CON3-2	NC	CON7-2	NC	CON11-2	NC	CON15-2	NC
CON3-3	NC	CON7-3	NC	CON11-3	NC	CON15-3	NC
CON3-4	Y2	CON7-4	Y6	CON11-4	Y0	CON15-4	YE
CON4-1	+24V	CON8-1	+24V	CON12-1	+24V	CON16-1	+24V
CON4-2	NC	CON8-2	NC	CON12-2	NC	CON16-2	NC
CON4-3	NC	CON8-3	NC	CON12-3	NC	CON16-3	NC
CON4-4	X3	CON8-4	X7	CON12-4	YB	CON16-4	YF

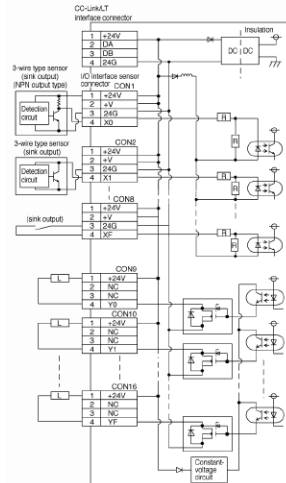
CL2Y16-TP1C2V



I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name	Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON5-1	+24V	CON9-1	+24V	CON13-1	+24V
CON1-2	NC	CON5-2	NC	CON9-2	NC	CON13-2	NC
CON1-3	NC	CON5-3	NC	CON9-3	NC	CON13-3	NC
CON1-4	Y0	CON5-4	Y4	CON9-4	Y8	CON13-4	YD
CON2-1	+24V	CON6-1	+24V	CON10-1	+24V	CON14-1	+24V
CON2-2	NC	CON6-2	NC	CON10-2	NC	CON14-2	NC
CON2-3	NC	CON6-3	NC	CON10-3	NC	CON14-3	NC
CON2-4	Y1	CON6-4	Y5	CON10-4	Y9	CON14-4	YD
CON3-1	+24V	CON7-1	+24V	CON11-1	+24V	CON15-1	+24V
CON3-2	NC	CON7-2	NC	CON11-2	NC	CON15-2	NC
CON3-3	NC	CON7-3	NC	CON11-3	NC	CON15-3	NC
CON3-4	Y2	CON7-4	Y6	CON11-4	Y0	CON15-4	YE
CON4-1	+24V	CON8-1	+24V	CON12-1	+24V	CON16-1	+24V
CON4-2	NC	CON8-2	NC	CON12-2	NC	CON16-2	NC
CON4-3	NC	CON8-3	NC	CON12-3	NC	CON16-3	NC
CON4-4	Y3	CON8-4	Y7	CON12-4	YB	CON16-4	YF

CL2XY16-DTP1C5V



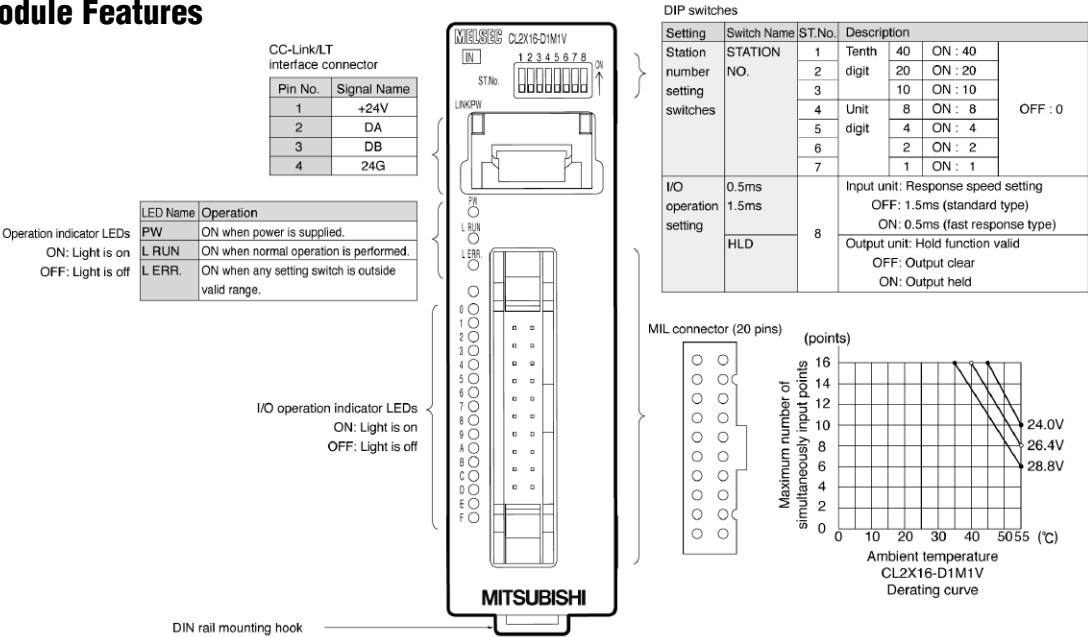
I/O interface sensor connector

Terminal No.	Signal Name	Terminal No.	Signal Name	Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	+24V	CON5-1	+24V	CON9-1	+24V	CON13-1	+24V
CON1-2	NC	CON5-2	NC	CON9-2	NC	CON13-2	NC
CON1-3	NC	CON5-3	NC	CON9-3	NC	CON13-3	NC
CON1-4	X0	CON5-4	X4	CON9-4	Y0	CON13-4	Y4
CON2-1	+24V	CON6-1	+24V	CON10-1	+24V	CON14-1	+24V
CON2-2	NC	CON6-2	NC	CON10-2	NC	CON14-2	NC
CON2-3	NC	CON6-3	NC	CON10-3	NC	CON14-3	NC
CON2-4	X1	CON6-4	X5	CON10-4	Y1	CON14-4	Y5
CON3-1	+24V	CON7-1	+24V	CON11-1	+24V	CON15-1	+24V
CON3-2	NC	CON7-2	NC	CON11-2	NC	CON15-2	NC
CON3-3	NC	CON7-3	NC	CON11-3	NC	CON15-3	NC
CON3-4	X2	CON7-4	X6	CON11-4	Y2	CON15-4	Y6
CON4-1	+24V	CON8-1	+24V	CON12-1	+24V	CON16-1	+24V
CON4-2	NC	CON8-2	NC	CON12-2	NC	CON16-2	NC
CON4-3	NC	CON8-3	NC	CON12-3	NC	CON16-3	NC
CON4-4	X3	CON8-4	X7	CON12-4	Y3	CON16-4	Y7

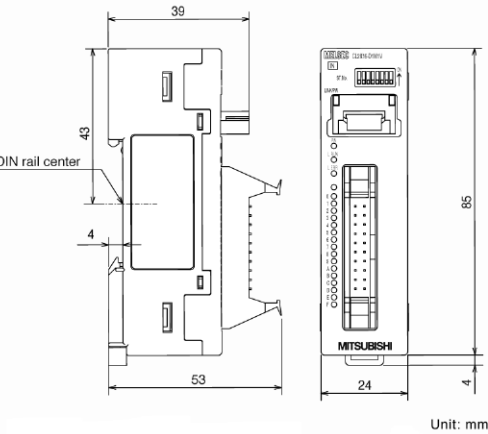
Performance Specifications: MIL Connector Modules

Input Module Model Name	Input Type		Number of input points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection		Internal Current Consumption	
						On Voltage	Off Voltage	OFF-ON	ON-OFF					
CL2X16-D1M1V	DC	+COM	16	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms	1.5ms	Two wire	16 points/common		45mA	
Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption
						1 Point	1 Common	OFF-ON	ON-OFF					
CL2Y16-TP1M1V	Transistor	Sink	16	Photocoupler	12/24VDC	0.1A	1.6A	1.0ms	1.0ms	0.1mA	Zener diode	One wire	16 points/ common	50mA

Guide to Module Features

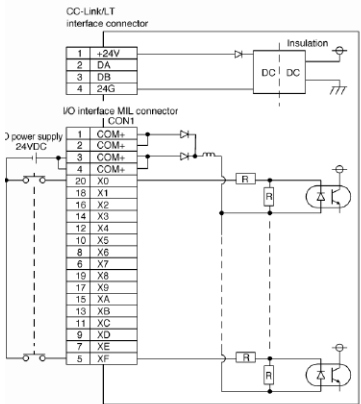


External Dimensions



External Connections

CL2X16-D1M1V

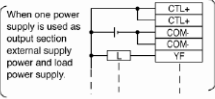
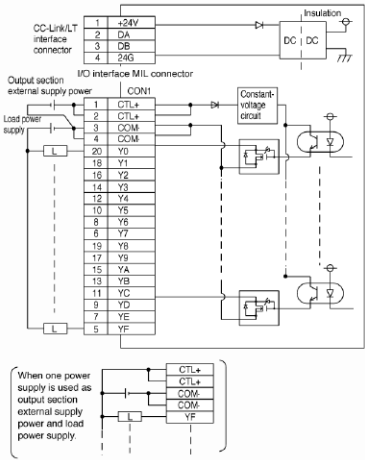


\* For COM+, use either of 1P and 2P or 3P and 4P.

I/O interface MIL connector

Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	COM+	CON1-8	X6
CON1-2	COM+	CON1-6	X7
CON1-3	COM+	CON1-19	X8
CON1-4	COM+	CON1-17	X9
CON1-20	X0	CON1-15	XA
CON1-18	X1	CON1-13	XB
CON1-16	X2	CON1-11	XC
CON1-14	X3	CON1-9	XD
CON1-12	X4	CON1-7	XE
CON1-10	X5	CON1-5	XF

CL2Y16-TP1M1V



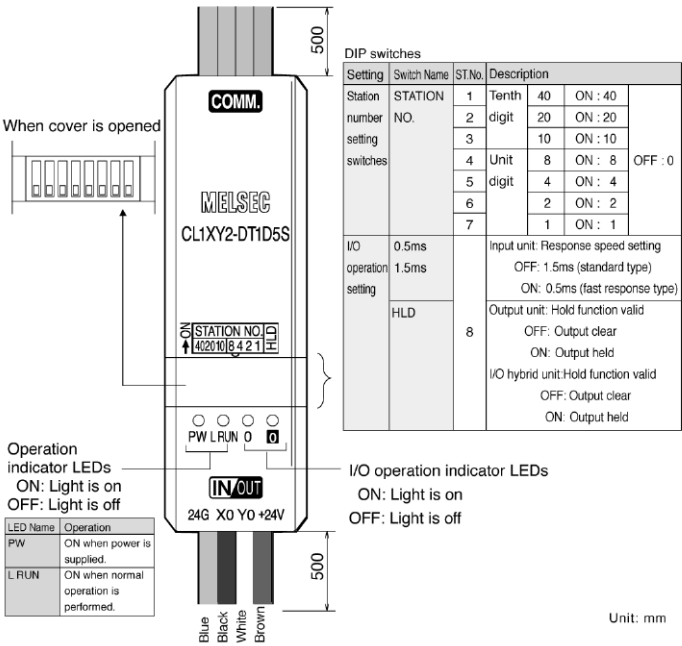
I/O interface MIL connector

Terminal No.	Signal Name	Terminal No.	Signal Name
CON1-1	CTL+	CON1-8	Y6
CON1-2	CTL+	CON1-6	Y7
CON1-3	COM-	CON1-19	Y8
CON1-4	COM-	CON1-17	Y9
CON1-20	Y0	CON1-15	YA
CON1-18	Y1	CON1-13	YB
CON1-16	Y2	CON1-11	YC
CON1-14	Y3	CON1-9	YD
CON1-12	Y4	CON1-7	YE
CON1-10	Y5	CON1-5	YF

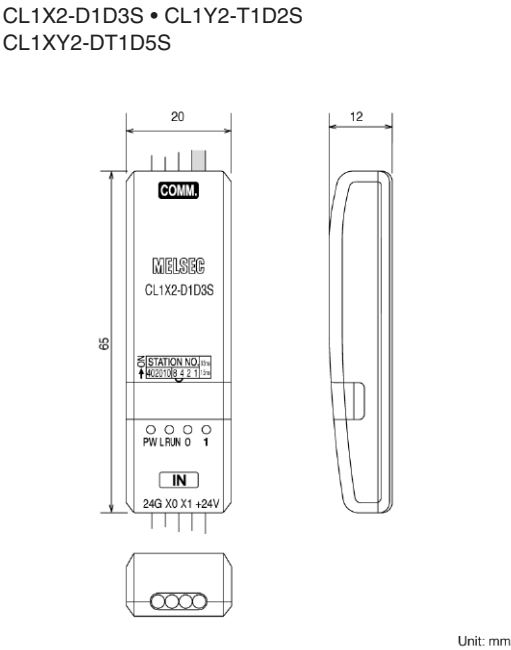
Performance Specifications: Cable Type Modules

Input Module Model Name	Input Type		Number of Input Points	Isolation Method	Rated Input Voltage	Operating Voltage		Input Response Time		External Connection Wire Type	Common Connection	Internal Current Consumption					
						On Voltage	Off Voltage	OFF-ON	ON-OFF								
CL1X2-D1D3S	DC	+COM	2	Photocoupler	24VDC	19VDC min	11VDC max	0.5ms/1.5ms max	0.5ms/1.5ms max	Three wire	2 points/common	40mA					
Output Module Model Name	Output Type		Number of Output Points	Isolation Method	Rated Load Voltage	Maximum Load Current		Output Response Time		Leakage Current	Surge Suppression	External Connection Wire Type	Common Connection	Internal Current Consumption			
						1 Point	1 Common	OFF-ON	ON-OFF								
CL1Y2-T1D2S	Transistor	Sink	2	Photocoupler	24VDC	0.1A	0.2A	1.0ms	1.0ms	0.1mA	Zener diode	Two wire	2 points/common	40mA			
Combined I/O Module Model Name	I/O Type		Number of I/O Points	Isolation Method	Input/Load Voltage	Input Response Time	Maximum Output Load Current		Input Operating Voltage		Output Response Time		Leakage Current	Surge Suppression	Connection Wire Type on Input/ Output Sides	Common Connection	Internal Current Consumption
							1 Point	1 Common	On Voltage	Off Voltage	OFF-ON	ON-OFF					
CL1XY2-DT1D5S	DC input/ transistor	+COM/sink	1/1	Photocoupler /photocoupler	24VDC/24VDC	N/A	0.1A	0.1A	19VDC min	11VDC max	1.0ms	1.0ms	0.1mA	Zener diode	Three wire/ two wire	1 point/common/ 1 point/common	40mA

Guide to Module Features

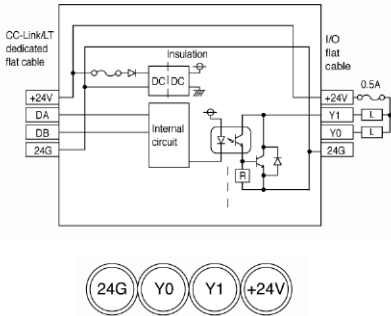


External Dimensions

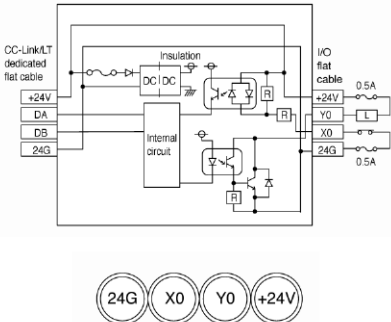


External Connections

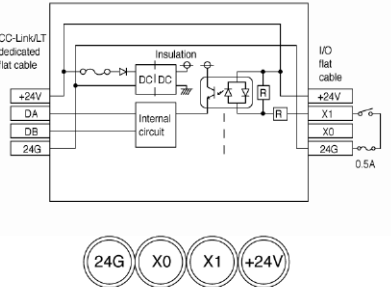
CL1Y2-T1D2S



CL1XY2-DT1D5S



CL1X2-D1D3S



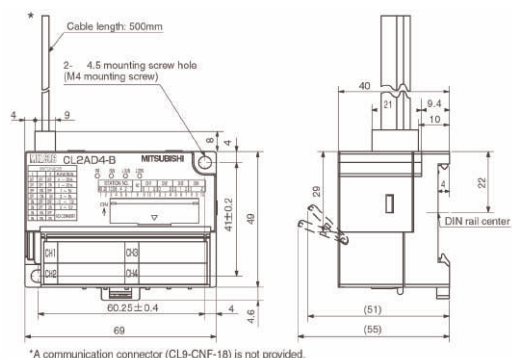
## Performance Specifications: CL2AD4-B Analog-Digital Converter Module

Model		CL2AD4-B						
Analog Input	Voltage	-10 to 10VDC (input resistance 1MΩ)						
	Current	0 to 20mADC (input resistance 250Ω)						
Digital Output		15-bit signed binary (-4096 to 4095)						
I/O Characteristics, Maximum Resolution, Accuracy (Accuracy Relative To Maximum Value Of Digital Output Value)			Analog Input Range	Digital Output Value	Accuracy		Max. Resolution	
					Ambient Temp. 25 ± 5°C (*1)	Ambient Temp. 0 to 55°C		Temperature Coefficient (*3)
		Voltage	-10 to 10V	-4000 to 4000	± 0.2% (±8 digit) (*2)	±4% (±8 digit) (*2)	±80ppm / °C (±0.0080% / °C)	2.5mV
			0 to 10V	0 to 4000				1.25mV
			0 to 5V					1.0mV
		Current	1 to 5V	0 to 4000	5μA			
			0 to 20mA			4μA		
			4 to 20mA					
Conversion Speed		200μs / 4 channel (*4)						
Absolute Maximum Output		Voltage: ±15V, current: ±30mA						
Analog Output		4 channels / 1 module						
CC-Link/LT Station Type		Remote device station						
Number Of Occupied Stations		16 point mode with four occupied stations (*5)						
Isolation		Specific Isolated Area			Isolation System	Dielectric Withstand Voltage	Insulation Resistance	
		Between communication system terminals and all analog input terminals			Photocoupler isolated Transformer isolated	1 min. duration of 500VAC	500VDC 10MΩ or more	
		Between power supply system terminals and all analog input terminals						
		Between communication system terminals and power supply system terminals						
		Across channels			Non-isolated	—	—	
Connected Terminal Block		Direct-coupled, 14-point terminal block (M3 screw)						
Applicable Wire Size		0.3 to 1.25mm²						
Applicable Crimping Terminal		RAV1.25-3 (conforming to JIS C2805), V1.25-3 (manufactured by JST Mfg. CO., Ltd.), 1.25-3, TG1.25-3 (manufactured by NICHIFU CO., Ltd.)						
Installing The Module		DIN rail attachment, screw mounting: No restrictions to the mounting orientation with M4 x 0.7mm x 16mm and over.						
Supported DIN Rail		TH35-7.5Fe, TH35-7.5Al (conforming to JIS-C2812)						
Module Power Supply (*6)	Voltage	24 VDC (20.4VDC to 28.8 VDC, ripple ratio: within 5%)						
	Current Consumption	0.070A						
	Start Up Current	0.570A						
Protection Degree		IP2X						
Weight (kg)		0.15						

### Notes:

- Standard accuracy
- Digital indicates the digital output value
- Accuracy for each 1°C temperature change
- The conversion speed of the first order lag filter channel is 400 $\mu$ s when a first order lag filter is used.
- The number of I/O occupied points (occupied station count) differs depending on the final channel permitted for conversion.
- A dedicated power supply/supply adaptor is used to supply power.

## External Dimensions





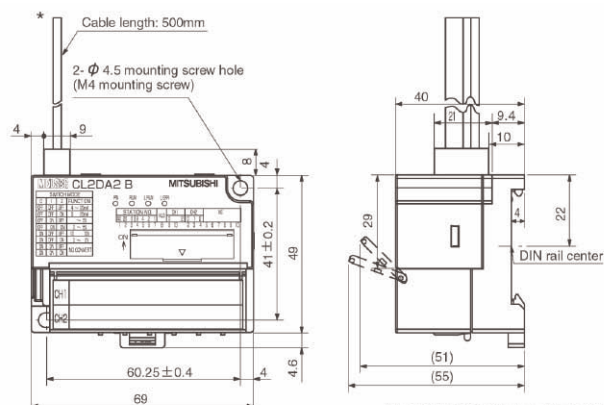
## Performance Specifications: CL2DA2-B Digital-Analog Converter Module

Model		CL2DA2-B							
Digital Input	Voltage	15-bit signed binary (-4096 to 4095)							
	Current	15-bit signed binary (-96 to 4095)							
Analog Output	Voltage	-10 to 10VDC (external load resistance: 1kΩ to 1MΩ)							
	Current	0 to 20mADC (external load resistance: 0 to 600Ω)							
I/O Characteristics, Maximum Resolution, Accuracy (Accuracy Relative To Maximum Value Of Digital Output Value)			Analog Output Range	Digital Input Value	Accuracy		Max. Resolution		
					Ambient Temp. 25 ±5°C (*1)	Ambient Temp. 0 to 55°C		Temperature Coefficient (*2)	
		Voltage	-10 to 10V	-4000 to 4000	±0.2% (±20mV)	±0.4% (±40mV)		±80ppm /°C (±0.0080% /°C)	2.5mV
			0 to 10V	0 to 4000	±0.2% (±10mV)	±0.4% (±20mV)			1.25mV
			0 to 5V						1.0mV
		Current	1 to 5V	0 to 4000	±0.2% (±40μA)	±0.4% (±80μA)		±80ppm /°C (±0.0080% /°C)	5μA
			0 to 20mA						4μA
4 to 20mA									
Conversion Speed		200μs / 2 channel							
Output Short-Circuit Protection		Provided							
Absolute Maximum Output		Voltage: ±12V, current: +21mA							
Analog Output Points		2 channels / 1 module							
CC-Link/LT Station Type		Remote device station							
Number Of Occupied Stations		16 point mode with two occupied stations (*3)							
Isolation		Specific Isolated Area			Isolation System	Dielectric Withstand Voltage	Insulation Resistance		
		Between communication system terminals and all analog input terminals			Photocoupler isolated Transformer isolated	1 min. duration of 500VAC	500VDC 10MΩ or more		
		Between power supply system terminals and all analog input terminals							
		Between communication system terminals and power supply system terminals							
		Across channels			Non-isolated	—	—		
Connected Terminal Block		Direct-coupled, 14-point terminal block (M3 screw)							
Applicable Wire Size		0.3 to 1.25mm²							
Applicable Crimping Terminal		RAV1.25-3 (conforming to JIS C2805), V1.25-3 (manufactured by JST Mfg. CO., Ltd.), 1.25-3, TG1.25-3 (manufactured by NICHIFU CO., Ltd.)							
Installing The Module		DIN rail attachment, screw mounting: No restrictions to the mounting orientation with M4 x 0.7mm x 16mm and over.							
Supported DIN Rail		TH35-7.5Fe, TH35-7.5Al (conforming to JIS-C2812)							
Module Power Supply (*4)	Voltage	24 VDC (20.4VDC to 28.8 VDC, ripple ratio: within 5%)							
	Current Consumption	0.170A							
	Start Up Current	0.470A							
Protection Degree		IP2X							
Weight (kg)		0.15							

**Notes:**

1. Standard accuracy
2. Accuracy for each 1°C temperature change
3. The number of I/O occupied points (occupied station count) differs depending on the final channel permitted for conversion.
4. A dedicated power supply/supply adaptor is used to supply power.

## External Dimensions



\*A communication connector (CL9-CNF-18) is not provided.



# CC-Link/LT Accessories

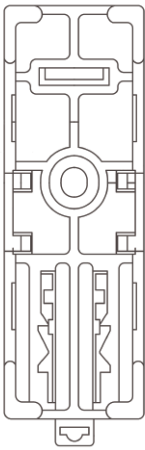
## Common Terminal Blocks CL2TE and CL2TE-10S

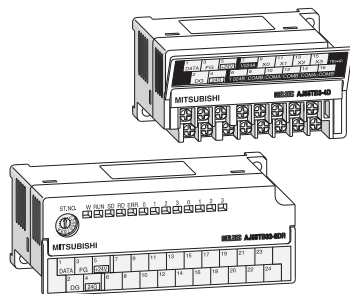
Use these terminal blocks to increase the number of common terminals on a CC-Link/LT I/O block in order to increase wiring convenience.



## Cable Type I/O Module Holder CL1-HLD

Use this holder to increase the convenience of mounting the cable type I/O modules. Can be bolted down or DIN rail mounted.





### MELSEC I/O Link

I/O points on the remote I/O modules are kept small so that just the necessary number of I/O signals are distributed to locations where control devices are located. In addition, no terminal resistance requirement and the T shape branch feature gives maximum flexibility of configuration and layout.

### Advantages (Bus Topology)

Bus topology of MELSEC-I/O LINK gives an advantage of high reliability. Shutdown of one remote I/O module doesn't affect communications of the others.

## MELSEC I/O Link Module Input Specifications

Model Name	Type	No. of Points	Rated Voltage	Rated Current	Operation Voltage (V)		Response Time (ms)		Connection Type	Points Per Common	No. of Stations
					ON	OFF	ON	OFF			
AJ55TB3-4D	DC input Sink/Source	4	24VDC	7mA	14	6	10	10	Terminal block	4	1
AJ55TB3-8D		8								8	2
AJ55TB3-16D		16								16	4
AJ55TB32-4DT	DC input Sink	2								2	1
AJ55TB32-8DT		4								4	1
AJ55TB32-16DT		8								8	2
AJ55TB32-4DR	DC input Sink/Source	2								2	1
AJ55TB32-8DR		4								4	1
AJ55TB32-16DR		8								8	2

## MELSEC I/O Link Module Output Specifications

Model Name	Type	No. of Points	Rated Voltage	Rated Current	Response Time (ms)		Connection Type	Points Per Common	Surge Absorber	No. of Stations
					ON	OFF				
AJ55TB2-4T	Transistor Sink	4	12/24 VDC	0.5A/pt, 2A/com	2	2	Terminal block	4	Zener diode	1
AJ55TB2-8T		8		0.5A/pt, 4A/com				8		2
AJ55TB2-16T		16		0.5A/pt, 8A/com				16		4
AJ55TB2-4R	Relay	4	24 VDC 240 VAC	2A/pt, 8A/com	10	12		4	None	1
AJ55TB2-8R		8						8		2
AJ55TB2-16R		16						16		4
AJ55TB32-4DT	Transistor Sink	2	12/24 VDC	0.5A/pt, 1A/com	2	2		2	Zener diode	1
AJ55TB32-8DT		4		0.5A/pt, 2A/com				4		1
AJ55TB32-16DT		8		0.5A/pt, 4A/com				8		2
AJ55TB32-4DR	Relay	2	24 VDC 240 VAC	2A/pt, 4A/com	10	12		2	None	1
AJ55TB32-8DR		4		2A/pt, 8A/com				4		1
AJ55TB32-16DR		8						8		2

#### Notes:

1. AJ55TB32-modules are input and output combination modules.
2. AJ55TB32-occupies only one station number for 4 point inputs and 4 point outputs.
3. See page 418 for dimensional information.

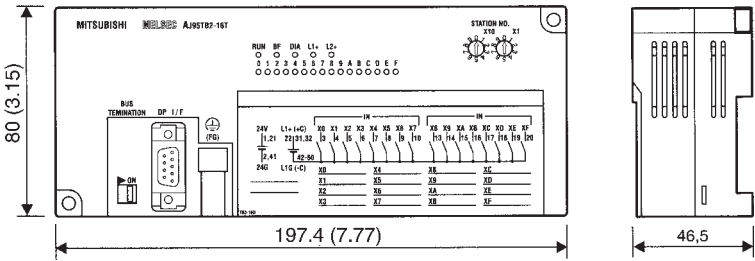
## Required Manuals

Model Number	Description	Contents
IB(NA)66574	MELSEC I/O Link Remote I/O System Master Module type AJ51T64/A1SJ51T64	Covers all AJ55TBxx-xxx I/O blocks

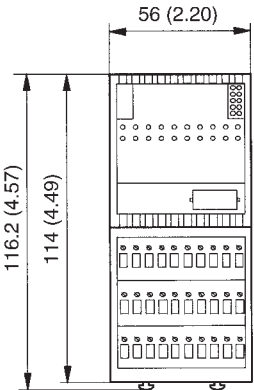
Note: Many of these manuals are available by free download from our website, [www.meau.com](http://www.meau.com)

# PROFIBUS-DP and I/O Link I/O Module Dimensions

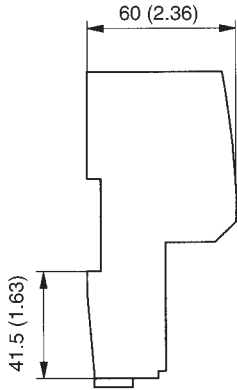
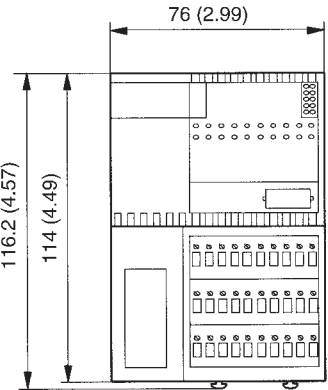
## Profibus-DP AJ95 I/O Modules



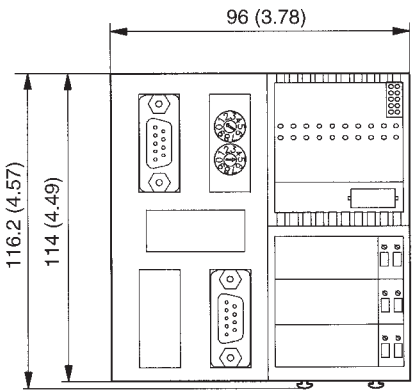
## Profibus-DP MT Modules Digital I/O and MT-4DA Modules



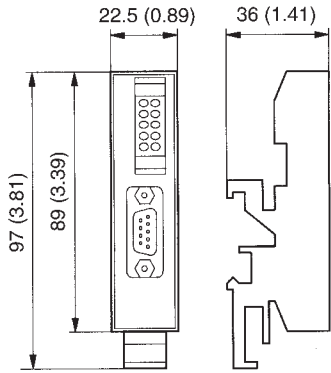
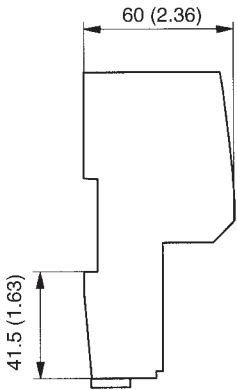
## Profibus-DP MT Modules Analog I/O Modules



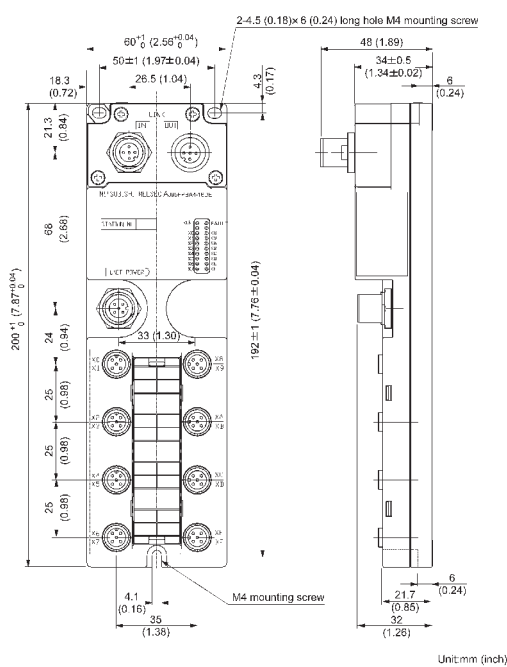
## MT-DP12 Bus Interface



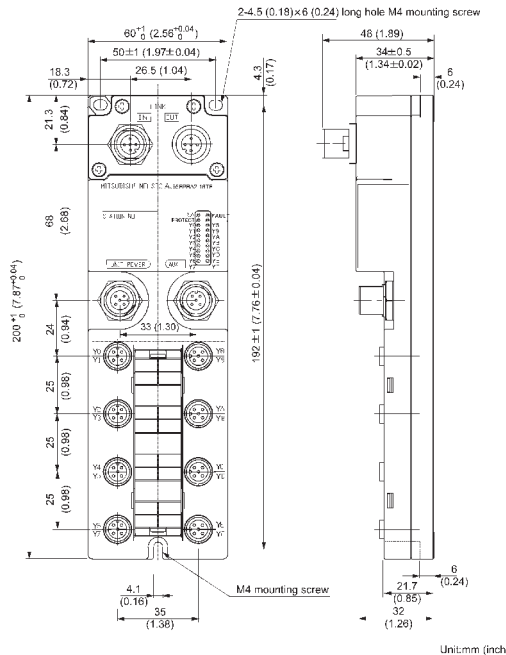
## MT-LE Module



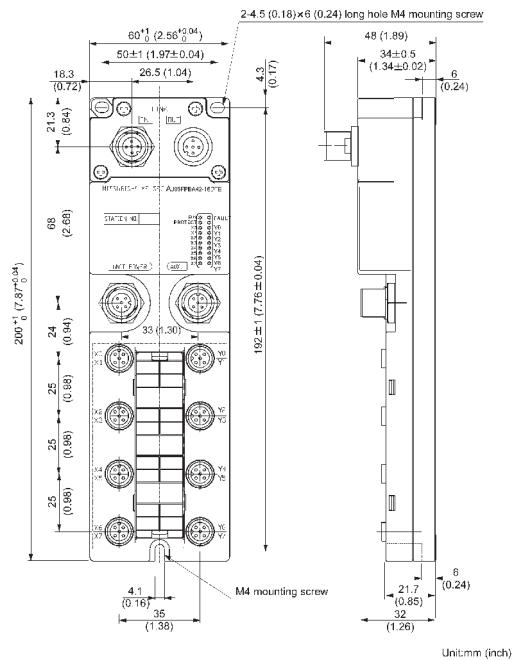
Profibus  
AJ95FPBA4-16DE



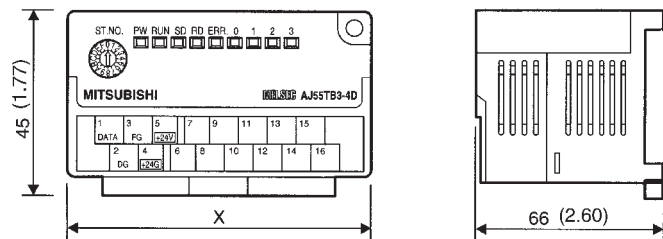
Profibus  
AJ95FPBA2-16TE



Profibus  
AJ95FPBA42-16DTE



I/O Link Modules



Model	X (m)	X (in)
AJ55TB-4	82	3.23
AJ55TB-8	114	4.49
AJ55TB-16	177	6.97